

THE
ANNUAL REPORT
MADE TO THE
URBAN SANITARY AUTHORITY
OF THE
County Borough of Huddersfield,
FOR THE YEAR
1893,

BY
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HEALTH OFFICE,

RAMSDEN STREET,

APRIL, 1894.

CHAIRMEN AND GENTLEMEN,

The year 1893, as far as Vital and Sanitary Statistics are concerned, and upon which it is my pleasing duty to report, indicates another step in the progressive improvement of the health history of the Borough of Huddersfield.

The great improvement exhibited is most broadly seen in the marked decline of the total death-rate.

In the previous year I had the pleasure of reporting the lowest annual death-rate that had been recorded, and now I have the satisfaction of beating that record 18·14 per 1000, by being able to inform you that our death-rate for the past year has been 17·43 or ·7 below that of 1892 and therefore the lowest in the history of the Borough, a fact which must be gratifying to the members of the Health and Sanitary Committees, as a vindication of their advanced position in discharging all obligations imposed upon them for the health of the community, and a proof not for one year only, but for a succession of years, that the necessarily large expenditure of the Department has not been in vain. The theoretical standard of health for a Borough like this has been put down at seventeen per 1000 of the inhabitants, so that our death-rate for 1893 is not very far off and I am sanguine of the hope that if the past policy of the Council be maintained, the standard mentioned will be before long reached. It will not be out of place to review here as cursorily as possible the result of our progress in Sanitation as indicated broadly by the death-rates.

It is acknowledged that the "recorded" death-rate is a valuable index of the health condition, and is not subject to

dependence upon the opinions of individual Medical men as to the disease which caused death. Thus in the classification of deaths for 1893, we find in 55 cases the cause described as "ill defined" or "not specified," and hence the inclusion amongst this class of several cases of Enteric Fever probably overlooked, would invalidate the death-rate from that disease but the gross death-rate would be unaffected so that the margin of possible fallacy is minimised as regards the gross death-rate. To display more clearly the statistics at my command, I have completed two Tables, presented before you some years ago and now compiled to embrace a period of 28 years, which for purposes of comparison is grouped into several smaller periods. The first Table exhibits the death-rates from the year 1865 up to 1893. The reason why these smaller periods have been selected will be found in the third column, while the improvement expressed in percentages will be found in the fifth and sixth columns. The fifth column embraces the improvement upon the previous period, while the sixth gives the improvement at each period upon the death-rate before the incorporation of the Borough.

Disease and death, paradoxical as it may sound, are the measure of public health, and the latter bears a close proportion to the former. The table therefore is highly instructive and well worthy of careful and attentive study. The result in the saving of mortality is an emphatic witness to the value of sanitary measures and municipal government, and the figures teach the lesson that the death-rate is under our own control to an enormous extent, by attention to the principles of Hygiene, and further, that the waste of life in former years was wholly unnecessary. Unfortunately whilst we are ready to admit the desirability of sanitary improvements for the preservation of life we are very averse to pay for them, and, happily for all, we cannot neglect the health of others without to some extent endangering our own. Every step in sanitation means expenditure in money, and we must recollect that so long as there is so much preventible disease, (I do not mean purely infectious), we must not delude ourselves that we have reached the end of our sanitary measures.

Sanitary Administration Compared by Death-rates in the County
Borough of Huddersfield.

No. of Years.	Periods covered.	Why selected.	Average death-rate from all Causes per 1,000 of the population per annum during the period.	Improvement per cent.	
				On previous period.	On first period.
3	July 1st, 1865, to June 30th, 1868.	Before the Incorporation of the Municipal Borough.	23·9		
5	Nov. 1st, 1868, to Oct. 31st, 1873.	One Sanitary Authority, with a Sanitary Inspector	23·2	2·9	2·9
3	Jan. 1st, 1874, to Dec. 31st, 1876.	Same, with Medical Officer of Health.	22·7	2·1	5·0
4	Years 1877-8-9-80.	Same, with an imperfect Clause requiring notification of Infectious Diseases.	22·4	1·3	6·3
4	Years 1881-2-3-4.	Same, with a more efficient Clause for notification and increased Fever Hospital accommodation.	21·0	6·2	12·1
4	Years 1885-6-7-8.		20·3	3·3	15·3
4	Years 1889-90-1-2	Same, with increased Sanitary Staff.	19·7	2·9	17·3
1	1893.	Introduction of Refuse Destructors, opening of Sewage Disposal Works, and new Small Pox Hospital.	17·4	11·1	27·3

The above Table reveals the information that the great improvement in the health history of the Borough might be said to be continuous, just as the Sanitary administration has been progressive. For while the death-rate before incorporation was approximately 23·9 per 1000 inhabitants, it fell during the five succeeding years to 23·2 under the administration of a Sanitary Authority with one Inspector. With the figures before you in column four of the Table, it is needless to pass under review the various periods. With regard to the four-year period from 1889 to 1892, it must not be forgotten that this includes the abnormal fatality from the visitation of Influenza, and yet it may be stated roughly that the death-rate of the Borough for the period just mentioned had been at least four per 1000 less than it was during the three pre-incorporation years.

I do not include the past year because of retaining four-year periods, which are extended enough to allow of reasonable deductions as to the progress made during the period embraced in the Table, and again the climatic conditions of 1893 although certainly in favour of what we might term "filth diseases," were, on the other hand, favourable also to a low gross death-rate, and therefore a town comparatively free from those conditions which foster such diseases would receive the full beneficial influence of favourable meteorological conditions. To return to our argument, if the mortality of the three pre-incorporation periods had prevailed during the former period 1889-92, then 380 more lives would have been sacrificed annually than there really were, while to bring the subject up to date the saving of life during the past year 1893 with its death-rate of 17·4 instead of 23·9, the mortality before incorporation, means 634 deaths fewer in the Borough.

This saving of human life and with it the mitigation of many miseries which a high mortality indicates, is to a large extent the result of your sanitary labours, and should act as an incentive to a still larger exercise of those sanitary powers which have been so prolific in the past. With respect to the economic value of population, Dr. Farr has pointed out that as houses and railways are valuable and profitable because

they yield annual returns, so the income of the population in the same manner derived from wages, can be capitalised approximately to show what an important factor the value of the population itself is in the wealth of the country. According to Dr. Farr, every individual life represents a certain value which he calculates at about £150 for the whole population, including men, women and children. If we apply this to the 634 persons whose lives have been saved during 1893, we have thus a saving of no less than £93,000 in one year, but each death means twenty cases of sickness, and each case means an illness of eighteen days. Now if we extend our calculations to the total amount of loss of wages, a sum will be reached which is astounding when it is displayed in figures, and justifies one in unhesitatingly asserting "that sanitary expenditure is not unproductive taxation, but capital carrying a profit." It is almost needless to observe that this remarkable reduction in the death-rate implies annually healthier living, less sickness, more work, less pauperism and less anxiety and suffering. Truly as Emerson has said "Public Health is Public Wealth."

We may here very fittingly compare our relative position amongst the 33 Large Towns during the year under review. In the subjoined Table, which sets forth an analysis of the statistics of the 33 Large Towns, as shown by the Registrar General, it is stated that, with one exception (Croydon), Huddersfield had the lowest "recorded" annual death-rate per 1000 inhabitants, without distinction of age or sex; while with regard to the mortality from the seven commoner infectious diseases and the infantile mortality, Huddersfield registered the lowest death-rate in both.

The annexed Table exhibits our relative position amongst the 33 Large English Towns, as calculated by the Registrar General :—

(a) Recorded Mortality.

TOWNS.	Rate per 1000.	TOWNS.	Rate per 1000.
Croydon	16·3	Plymouth	21·2
Huddersfield	17·2	London	21·3
Halifax	17·4	Hull	21·8
Derby	18·2	Burnley	21·8
Portsmouth.....		Birmingham	22·0
Brighton	18·4	Leeds	22·3
Nottingham	18·5	Sheffield	
West Ham	18·9	Sunderland	22·5
Bristol		Wolverhampton.....	23·3
Norwich	19·3	Blackburn	
Gateshead		Bolton	24·1
Swansea	19·6	Salford	
Cardiff	19·7	Manchester	24 9
Leicester	20·0	Preston.....	26·4
Birkenhead	20·5	Liverpool	27·3
Oldham	21·0		
Bradford			
Newcastle-on-Tyne ..			

(b) Infantile Mortality.

TOWNS.	Deaths to 1000 births.	TOWNS.	Deaths to 1000 births.
Huddersfield}	141	Sheffield	191
Bristol		Norwich	195
Croydon	155	Birkenhead	196
Derby	156	Bradford	197
London	164	Birmingham	198
Portsmouth.....		Bolton	199
Brighton	169	Manchester	203
Plymouth		Leeds	206
West Ham	170	Hull	
Swansea		Wolverhampton	208
Nottingham	173	Salford	210
Gateshead		Liverpool	211
Halifax.....	173	Leicester	320
Newcastle-on-Tyne	174	Burnley	223
Cardiff	179	Blackburn ..	241
Oldham	187	Preston	269
Sunderland ..	188		

(c) Zymotic Mortality.

TOWNS.	Rate per 1000.	TOWNS.	Rate per 1000.
Huddersfield	1·2	Cardiff	3·3
Bristol	1·7	West Ham	3·4
Halifax		Bradford	
Brighton	1·8	Sunderland	
Swansea		Leeds	3·5
Derby	2·1	Sheffield	
Croydon	2·2	Gateshead	
Oldham	2·5	Manchester	3·7
Newcastle-on-Tyne ..		Burnley	3·8
Nottingham	2·6	Liverpool	3·9
Portsmouth	2·8	Leicester	4·0
Plymouth		Salford	4·1
Wolverhampton		Blackburn	
Birkenhead		Hull	
Birmingham	3·0	Bolton	4·7
London	3·1	Preston	6·0
Norwich			

The death-rate of the 33 Large English Towns, with an aggregate population of 10,327,846 persons, as estimated by the Registrar General was 21·7 per 1000 of the above population, against our death-rate of 17·43. To escape bewilderment I have dealt with the “recorded” and not the “standard” death-rate in these comparisons. Again in the 67 other large Towns, the gross death-rate amounted to 19·15, while England and Wales, less these 100 Towns, presented a death-rate for 1893, of 17·6 per 1000 inhabitants. Even in the Rural Districts, representing a population of 10½ million persons, the death-rate from all causes was at the rate of 17·4, which is exactly our rate for the Borough.

It is interesting to note the following death-rates in various cities. Edinburgh 19·75, Glasgow 23·37, Dublin 27·0, Paris 21·8, Berlin 20·97 and Vienna 23·52 per 1000.

Not only does the Borough of Huddersfield stand out pre-eminently favourable as regards the gross annual death-rate, but also in relation to Zymotic Diseases, for while we record a mortality from the seven commoner infectious diseases of 1·38 per 1000, England and Wales present a death-rate from the same diseases of 2·46, the 33 Large

English Towns 3·18, the 67 other Large Towns 2·84, and England and Wales less these 100 Towns 1·89 per 1000 of the population. These figures are sufficiently explanatory of the fact that Sanitary expenditure in Huddersfield has had its reward, and such gratifying facts alone might serve as a sufficient Annual Report for the County Borough of Huddersfield. It would appear from the Vital Statistics of the past year, that the depression in trade has not had any prejudicial effect upon the public health, although the wage earning or laboring portion of the population have probably suffered in a diminution of wages, but not from restricted food supply, and this would tend to a lower rather than a higher rate of mortality, because improvident marriages and intemperance are to some extent checked.

In the next table several statistical rates are given with the purpose of supporting the conclusions derivable from the recorded annual mortality of past years. These rates are held by sanitarians as indicative of the condition of public health, and the figures need little explanation, the only regrettable feature in the table is the stationary condition of the mortality amongst infants under one year of age since the year 1881, but the other figures adequately prove that we are making highly satisfactory progress by our sanitary measures in spite of the numerous factors existing, and being created nowadays to nullify some of the benefits which result from sanitation. Such progress has been the result of steady and unremitting perseverance in the removal of insanitary conditions hostile to human life.

Death Rates per 1000 persons in the County Borough of
Huddersfield since 1874, in four year periods.

Years.	Children under one year of age in proportion to each 1000 births	Seven Zymotic Diseases.	Diseases of the Breathing Organs.	Consumption alone.
1892 to 1889	169	1.79	6.46	2.16
1888 to 1885	169	2.00	6.38	2.31
1884 to 1881	168	1.83	6.65	2.52
1880 to 1877	158	2.67	7.17	2.70

Although the mortality amongst infants under one year of age shows no improvement we must remember that unhealthy agencies in social conditions, apart from civic arrangements, are arising detrimental to early life, *e.g.*, out-nursing, burial insurance, opiates and injurious female occupation, so we must be thankful that we are maintaining our position.

With regard to the Zymotic diseases, the improvement in the mortality for the four years 1889-92, upon that of 1877-1888 has been nearly 33 per cent. Now such diseases are supposed to resemble each other in their origin and spread, and hence every community which has been defending itself against the commoner and everyday infectious diseases will reap in the same proportion protection from the more alarming diseases such as cholera.

The death-rates per 1000 living in respect of the commoner infectious diseases for various periods are displayed in the following table.

Periods covered.	Measles.	Scarlet Fever.	Diphtheria	Whooping Cough.	Fever.	Diarrhœa.
1892-89	·71	·21	·7	·37	·14	·26
1888-85	·65	·28	·20	·42	·12	·32
1884-81	·40	·16	·50	·58	·16	·49
1880-77	·32	·70	·75	·45	·43	·58
1876-74	·44	·94	·12	·36	·36	·55

The results revealed are particularly gratifying to the health officials as those diseases, such as, scarlet fever, fever, and diarrhœa, which are most directly under control show the greatest improvement, while the measles mean mortality of 1892-89 is double that of 1880-1877. With regard to diphtheria it would be unwise to draw any positive deductions because some of the cases ascribed to this disease could hardly be classed as true examples of diphtheria. In the interference of the health officials in cases of infectious disease the reward of their labours is directly returned to them as is shown most satisfactorily in the above table.

While claiming much for the more practical aspect of sanitation, we must acknowledge the invaluable aid afforded by other branches of Municipal work, and all really coming within the domain of Sanitary Science, for instance, the provision of Baths, of an Abattoir, a Model Lodging House, Artizans' Dwellings, Tramways, Public Market, Pure Gas, Electric Light, and most important of all a sufficient supply of wholesome water.

Further, each individual in the community can play his part, and no doubt some householders do practically aid the Corporation in improving the health of the town, but there

is still plenty of room for improvement on this point, and it may not be out of place to indicate here how to do it. Greater care is necessary in the disposal of night chamber refuse in its proper place and not in the gullies in the streets; the disposal of slop water down the yard drains and not into the closet pails; in preventing the choking up of drains by scouring cloths and other things not intended to be put in drains; and a greater regard for the tidiness of the streets in the disposal of shop sweepings and waste paper.

Another point worthy of the attention of every householder is the inconsiderate disposal of all manner of things into the ashpit. I think I am within the mark if I say that the amount of domestic refuse carted away for cremation at the destructors could be reduced by 30 per cent. if every householder would see that all consumable refuse was utilized on the kitchen fire, then a decided reduction in the sanitary expenditure of the Corporation would follow, in addition to the absence of an insanitary condition in proximity to the dwelling.

I propose now, before passing on to Vital Statistics, to make a few general remarks upon Sanitary Work.

Frequent conferences involving much time have taken place anent the disposal of refuse, a subject second to none in its relation to public health, and a measure specially noted in the valuable memorandum issued by the Local Government Board in connection with the probabilities of the introduction of Asiatic Cholera. The disposal of house refuse still continues the bane of the Department, and no one who has not entered practically into this most important operation can imagine the difficulties with which this question bristles. There are roundly speaking 16,000 tubs, and 14,000 ashpits in 12,000 acres—the area of the Borough. The system of tubs if attended to every two or three days would be the best, but this is impracticable in view of cost, for even the emptying of them within the fortnight amounts now to £7,000, and if tubs are to be allowed in outlying districts as they are at present the

expenditure must increase. These tubs alone, minus ashpits represent a superficial area of 3879 square yards, 15 inches deep if collected together, and therefore, are no mean factors in contaminating the air in the immediate neighbourhood of dwelling-houses. The opposition of landlords and ratepayers to the deposit of pail contents in their neighbourhood, and to the accumulation of ashes in tips—opposition with which I agree entirely to a certain extent—surround the task of scavenging with almost insuperable difficulties for the present. Before passing on to ashpit refuse let us look at one topic of vital importance, and requiring serious and immediate consideration, I refer to the general adoption of the water carriage system as a substitute more or less for our pails. With the exception of the existence of some stone sewers, our drainage system of the single method by assisting to keep the sewers free and clean favours the more general adoption of water-closets. Every facility should be given to owners and they should be encouraged by the provision of a free supply of water, which in my opinion would be much less cost to the Corporation than the gratuitous removal of pails. One point is overlooked, that, the washing and cleansing of these pails take one half the quantity of water which would be necessary for the water-closets.

From a sanitary point of view, and probably from an economical the adoption of the system where suitable would improve the property in the opinion of the tenants. The proximity of the pails to the houses in some cases within two or three yards, must allow the noxious emanations to pervade the house, where if they do not actually cause disease probably predispose the inmates to sickness. Only 128 applications were made to empty pails during 1893, amongst the 16,000 pails in the Borough, a satisfactory testimony to the efficiency of this costly work. I have already pointed out the great advantages of the water carriage system as compared with the pail method, which requires careful and constant attention, in a special report upon the subject to the Sanitary Committee.

ADDENDUM.

I think it well to correct an impression which might be gathered from page 15, line 18—20, by stating that the Hillhouse Depot Destructor is doing its work quite satisfactorily, and can be viewed at any time. The 1/4 per ton refers to this Destructor, and represents the cost of cremation only. See Table in Appendix of the work of the Destructor.

Another matter of equal interest is the disposal of domestic ashpit refuse. All are agreed that decaying organic and vegetable matter forms a favourite breeding ground for disease germs. Over 100 tons of such refuse are produced daily and must be got rid of. The only perfect way of disposal known to us at present is cremation, primarily by the householder, and what cannot be burnt at home then at the destructor provided for the purpose.

It is the power of the ratepayers to reduce this output of ashpit refuse daily removed certainly to 60 or 70 tons, and not only so but the contents, minus vegetable and organic filth, should not require to be removed so frequently, for ashes have a certain disinfecting power. In spite of all warning there is little or no improvement. How often one hears "I pay rates and why should I not do the same as Mr. So and So."

Unfortunately the failure of St. Thomas' Road destructor has placed the department at a great disadvantage by upsetting the work and in increasing the expenditure.

During 1893, the cremation of refuse cost $1/4$ per ton, and then about 37 per cent. of it had to be carted away as clinkers. In times gone by, "tips" which the Council rightly condemns were plentiful throughout the Borough and free of cost, but within the past three years 13 places for the deposit of refuse for manurial purposes have been discontinued, some by reason of complaints, others because of their unsuitability, so that it will be evident the expenditure must increase, and should have years ago, to meet the sanitary demands of the people now receiving their due attention.

The longer we live, the greater shall the antipathy to tips increase, and probably their continuance forbidden by law, and simply because the community will not use the ashpit for what it is intended, namely: dry ashes which are harmless, and hence it is necessary to resort to destructors as a sanitary requirement to remove those dangerous accumulations from our midst.

There is another item, the pollution of our streams, worthy of serious attention. I have reported generally upon the condition of the rivers Colne and Holme and several of their tributaries. The Health Committee has passed several resolutions with regard to this matter and have requested active measures to be taken against all offenders. One gratifying feature of our inspections of the rivers Colne and Holme is that a very large amount of pollution comes from upstream outside the Borough, and a surprisingly small quantity from the Borough. I daresay the Conservancy Board which has been recently formed will shortly make itself manifest by some important work in the upper reaches of those streams.

Not only have we occupied much time with pollutions of earth and water, but also with another equally if not more important element, namely: air. The smoke nuisance has come frequently under discussion, and the Committee appointed to investigate the matter is conclusively of opinion that much of the smoke that besmears our town could be prevented. In future, proceedings will be taken when the limit exceeds seven minutes in the hour, although legally no limit is allowable.

The items in the Summary (page 62) display a variety of work, and will enable those less intimately acquainted with sanitary work to judge, how difficult and slow the progress, and how aggravating and disheartening at times. Some one unacquainted with the tedious orthodox means at our disposal for remedying a nuisance airs his grievance in the press, or amongst his friends before coming to the department, while others try to use the department in the breaking of leases, in neighbour's quarrels, and in other matters with which the department has nothing to do.

Population.

The number living at Midsummer, 1893, which is the basis upon which the various rates are calculated, was according to the estimate of the Registrar General 97,552. At the last

census the population of the Borough was found to be 95,422, so that during two and a quarter years there has been an increase of 2,130, that is of course assuming the correctness of the figures for the year 1893, but between the taking of the census in 1891 and Midsummer of 1893, the Births registered in the Borough numbered 5,137 and the deaths 4,131 showing the natural increment of births over deaths as 1,006, that is to say about $47\frac{1}{2}\%$ of the estimated increase, while the remainder 1,124 or $52\frac{1}{2}\%$ is supposed to have arisen from an excess of immigrants over emigrants, which in my opinion is too high an estimate. The population of the various Townships forming the Borough is given in the Census Returns of 1891, and the estimated increases for 1893 are arranged in Table 5 of the appendix. The subjoined Table brought up to date exhibits the growth of the Borough since the Census of 1871.

Year.	Population.	Rateable Value.
1871	70,253	£227,961
1881	81,841	£285,847
1891	95,656	£422,873
1893	97,552	£432,393

Marriages.

Periods.	Borough of Huddersfield.	Proportion of marriages to average population.
1876-1880	820	1 to 96 persons
1881-85	852	1 to 99 „
1886-90	843	1 to 108 „
1891	878	1 to 109 „
1892	839	1 to 115 „
1893	837	1 to 117 „

It appears that there is no improvement in the marriage rate, for the 837 marriages celebrated in the Borough of Huddersfield during 1893 form another step though a very small one in the progressive reduction since 1885.

Births.

During the year 1893, 2,311 births have been registered within the Borough being an increase of 97 on the previous year, but a decrease of 30 on the year 1891. Of the total births 1,161 were males and 1,150 females, equal to a birth rate of 23·77 for each 1,000 of the estimated population, against 23·82 the mean rate of the five previous years, and therefore practically the same, but if we take the ten previous years, 1883 to 1892, then the birth rate for 1892 is 2·45 per 1,000 below the mean of those years. In this particular we are in correspondence with the diminished birth rate of England and Wales, which equalled 30·8 per 1000, while the mean birth rate of the thirty-three principal towns for the year was 31·92. With regard to the Borough the increase of population that would accrue from a low death rate is counterbalanced by an unusually low birth rate, but a successively low birth rate has probably helped in producing to some extent the low death rate.

Dr. Farr stated that, other things being equal, a high birth rate involves a low death rate because of the production of a large proportion of young persons in the age distribution of the population more than sufficient to counterbalance the mortality amongst the increased proportion of children so that by this opinion for years to come we will have, unless there is a great improvement in the birth rate, a population of persons of the age more liable to sickness and death.

The subjoined Table shows the quarterly number of births of males and females.

1892.	Males.	Females.	Totals.	Birth-rate.
1st Quarter ...	294	303	597	24·56
2nd „ ...	297	289	586	24·11
3rd „ ...	277	284	561	23·08
4th „ ...	293	274	567	23·33
Totals ...	1161	1150	2311	23·77

From the Table it would appear that the season most prolific of birth is the Winter. The District of Dalton recorded the highest birth-rate 27·71, while Fartown followed with 25·86 of a birth-rate. The Deighton and Bradley District registered the low birth-rate of 18·72 per 1000 of the population. For the birth-rates of the other Districts see Table VIII. Appendix.

Deaths.

The total deaths registered from all causes throughout the year numbered 1,695 made up of 893 males and 802 females. This with two exceptions is the lowest observed during the past fifteen years. In 1888, 1,686 deaths were registered and in 1881, 1665, but the increase of the population since then must be taken into account, so that these numbers expressed in relation to each thousand of the inhabitants living in these years, alter materially any hasty conclusions drawn from these figures. In the years 1881 and 1888, the death-rate was 20·05 and 18·51 respectively, while the rate of mortality during 1893 was only 17·43 per 1000 persons living. Further particulars as to the births and deaths in the Borough are given in Table I., II., III., IV. and V. (Appendix).

The relative proportion of deaths in 1893 amongst infants and children, young persons, adults and old people, and their proportion to the whole number of deaths in the Borough is readily shewn in the subjoined tabular form.

DEATHS.		1st quarter	2nd quarter	3rd quarter	4th quarter	Total.	Percent- age to Total Deaths.
Under 1 year of age	1893	75	77	96	77	325	19
	1892	90	100	60	86	336	19
	1891	128	120	106	76	430	20
Between 1—5	1893	51	53	34	57	195	12
	1892	66	73	57	51	247	14
	1891	141	93	58	42	334	15
Between 5—15	1893	18	18	21	23	80	5
	1892	25	18	11	17	71	4
	1891	25	37	21	17	100	5
Between 15—25	1893	26	30	16	30	102	6
	1892	25	24	24	23	96	5
	1891	33	26	28	21	108	5
Between 25—50	1893	97	76	83	89	345	20
	1892	90	86	84	73	333	19
	1891	109	131	72	83	395	18
Between 50—60	1893	51	53	49	46	199	12
	1892	57	48	29	49	183	10
	1891	60	108	33	41	242	11
Between 60—80	1893	109	100	88	93	390	23
	1892	148	86	79	102	415	24
	1891	145	182	91	91	509	23
80 and upwards	1893	17	13	13	16	59	3
	1892	18	15	16	16	65	4
	1891	27	24	4	16	71	3

It may be noticed in the Table that the mortality under one year of age corresponds to the mortality between the ages of 25 and 50, while the death per centage between one and five years approaches that between 50 and 60. Such comparisons however to the total deaths do not afford satisfactory conclusions, and it is necessary to use as a basis for other calculations the number of persons living at the different age periods. The table shows that of 520 deaths amongst children under five years of age, 325 were registered amongst infants under one year of age, against 336 and 430 in 1892 and 1891, so that the deaths during 1893 were fewer than usual, but bore the same per centage, 19 % to the total, as in the previous year. The rate of infantile mortality expressed in proportion to each 1000 births registered was 141 against 152 in the preceding year, or 168 the average of the previous ten years, a good margin in favor of the rate for 1893, the lowest that has yet been recorded in the Borough. After one year of age the deaths decline with the increase in age until the period between 25 and 50 years, when the percentage of deaths to the total death-rate shows a decided increase. The highest per-centage is not reached (23) until the age period from 60 to 80, when 390 deaths were registered, against 580 and 480 in the two preceding years.

It is manifest, therefore, that the greatest strain upon town life occurs during childhood and mature age.

Infantile Mortality.

The record of the proportion of infantile mortality in the Borough during the past year is the most satisfactory one of any yet recorded, and as this has always been a regrettable feature in the vital statistics of the Borough it is to be hoped that this improvement will be maintained and even lowered.

The rate per 1,000 births in our Borough was 141.

Amongst the 33 large English towns it was 181 per 1,000 births and ranged from 141 in Huddersfield to 269 in Preston.

As the number of deaths at this period of life is used as a Sanitary barometer with regard to the health of a district, the following table displays the various death causes.

DISEASES.	1st Quarter		2nd Quarter		3rd Quarter		4th Quarter		Males	Females	Total
	M	F	M	F	M	F	M	F			
Measles (3), Scarlet Fever (1)	2	..	..	..	2	..	..	..	4	..	4
Whooping Cough (4), Croup (1)	1	..	..	..	1	..	2	1	4	1	5
Diarrhœa	..	..	3	2	12	12	..	1	15	15	30
Erysipelas (5), Syphilis (3)	1	..	..	2	1	2	1	1	3	5	8
Influenza (1) Tuberculosis (2)	..	..	..	..	2	1	..	..	2	1	3
Tubercular Meningitis (3)	1	..	..	1	..	1	..	..	1	2	3
Premature Birth	6	6	7	6	2	2	4	4	19	18	37
Congenital Malformations	..	3	2	2	..	..	4	1	9	6	12
Meningitis (9), Hydrocephalus (4)	4	1	1	1	1	2	1	3	7	6	13
Convulsions	6	5	5	5	5	3	4	4	20	17	37
Laryngismus Stridulus (1), Laryngitis (2) ..	..	..	..	1	..	..	2	..	2	1	3
Bronchitis	6	6	7	3	5	2	9	10	27	21	48
Pneumonia	4	3	4	3	1	2	3	3	12	11	23
Dentition (3) Tonsilitis (6)	..	..	1	1	3	1	2	1	6	3	9
Dyspepsia (1), Gastritis (1)	..	..	..	..	..	2	..	..	..	2	2
Gastro-Enteritis (7)	1	..	..	1	2	2	1	..	4	3	7
Obstructive disease of Intestine	..	1	..	..	2	..	1	..	3	1	4
Atrophy, Debility, Marasmus	5	4	7	1	10	9	7	2	29	16	45
Inanition, Mal Nutrition	..	1	..	..	2	1	2	..	4	2	6
Not specified or ill-defined	..	..	..	..	..	..	1	1	1	1	2
Other Diseases	5	3	6	5	3	1	1	..	15	9	24
Total.....	42	33	43	34	54	42	45	32	184	141	325
	75		77		96		77		325		

Classified Causes of Death.

The deaths from specified causes are arranged in classes and orders which however contain diseases distinct from one another though forming the same class or order. The relative fatality from these death groups is made by calculations per 1,000 living at all ages and these are displayed in the following table for the two years 1892-3.

The subjoined Table, a summary of Table VI. (Appendix) shows the death-rates in the Borough, according to the Registrar General's classification.

	1893	1892
1. Specific Febrile Diseases—		
Zymotic	1·38	1·53
Other Miasmatic Diseases...	0·03	...
Malarial	0·33	0·52
Venereal	0·07	0·41
Septic	0·14	0·12
2. Parasitic Diseases	...	...
3. Dietic Diseases	0·04	0·04
4. Constitutional Diseases	3·27	3·72
5. Developmental Diseases	1·30	1·14
6. Local Diseases—		
Nervous System.....	2·23	2·26
Circulatory „	1·26	1·44
Respiratory „	3·76	3·66
Digestive „	1·20	1·26
Urinary „	0·43	0·50
Reproductive „	0·09	0·10
Bones and Joints.....	0·07	0·08
Integumentary System	0·02	...
7. Violence	0·37	0·48
8. Ill-defined and not specified causes...	1·42	1·24

The table shows at a glance that the greatest number of deaths have been ascribed to the diseases of the respiratory organs which are placed amongst the order of local diseases and do not embrace in that calculation consumption or phthisis, which appears amongst the constitutional diseases, and therefore if the 165 deaths due to consumption were included as a local disease then the mortality ascribed to diseases of the respiratory organs would be much greater.

With respect to the other groups there is little to note beyond the similarity of the previous year. It is worthy of observation that there is a decrease in the number of deaths assigned to violence, while there is an increase in the deaths registered from causes ill defined or not at all specified.

I will now pass on to notice particularly some of the more prominent causes of death. The 190 deaths referred to

Specific Febrile diseases included 134 from the seven commoner infectious diseases, viz.:—small pox, measles, scarlet fever, diphtheria, whooping cough, fever and diarrhœa, while the remainder were contributed by the minor zymotics such as erysipelas, puerperal fever, etc. Under the heading of specific diseases I have included influenza to which 32 deaths were directly credited during the year.

In passing to the particular causes of death during the year, the fatality due to purely preventable diseases claims our first attention, but we must still bear in mind that much of the gross mortality from other diseases is preventable also. I need only mention the lamentable loss of infantile life from ignorance and carelessness of the first principles for the preservation of life, and the loss of life from millworker's bronchitis due frequently to the thoughtless carelessness of the victim.

Seven commoner infective diseases:—Comment has already been made upon the favourable condition of this mortality. The total deaths 134, indicate a zymotic death-rate for the year of 1·38 per 1000, the corresponding rate for the previous year having been 1·53, while that of the 33 towns for 1893 was 3·18 per 1000. If account were only taken of those diseases made subject to compulsory notification the zymotic mortality would be reduced to ·46 per 1000, the other deaths having reference only to the unnotified diseases such as measles, whooping cough, and I might add diarrhœa, which though notifiable is not strictly enforced.

The various channels by which the public are exposed to the danger of contracting infectious diseases have been illustrated during the year, the school, the dairy, the polluted well water, the factory, the rag shop, the work-room, the tram car, the railway carriage, the beggar, and the tramp have each been suspected as the known or probable causes of some outbreak of infectious disease. These agencies point clearly to the people as the active medium, and upon them much of the responsibility rests.

Small Pox.

Dealing with the various causes of death I have first of all to speak of small pox. Fortunately the figures for criticism are not large, but they go to corroborate the opinion that vaccination has verily removed the sting of this disfiguring and loathesome scourge.

This disease has been undesirably prevalent in one or other adjacent district during 1893, but I am pleased to report that at no period of the year did the disease cause alarm in this Borough, though it was a source of anxiety and trouble to the department, and necessitated the utmost vigilance and promptness. The freedom from alarm amongst the community, and the absence of any interference with trade interests are results bought by careful forethought to the benefits of vaccination, and still greater blessings would follow if perfect instead of partial immunity were obtained by the repetition of vaccination at puberty. In some continental countries re-vaccination is compulsory and in this country in several Government Departments. It should therefore, speaking logically, be extended to the whole of the country.

The history of the disease during 1893 is one of a series of individual importations into the Borough, keeping us constantly on the *qui vive*, and I may safely say, that not once were the officials caught at a disadvantage and every introduction was kept well in hand. At the close of the year 1892 there remained only one patient in the Birkby Hospital suffering from small pox, but during 1893, 48 cases came to the knowledge of the department, and every one of them removed on the day of notification for hospital isolation after being examined by the Medical Officer of Health.

The time or seasonal incidence of the disease was as follows :—

Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
13	8	1	3	9	4	1	8	0	0	0	1
22			16			9			1		

The statistical months of September, October and November remained free, while the largest number of cases occurred in January, followed by 9 in May. From statistics on this point it has been gathered that throughout this country the highest average maximum of cases of small pox during the past fifty years has been recorded in May month.

Of the 48 cases 28 were notified from the Central district, while 15 came from the outer-districts, and 5 from the Workhouse. Fartown produced 4, Almondbury and Lindley 3 each, Moldgreen and Marsh 2 each and Lockwood 1 case, so that the disease cropped up pretty well from all parts of the Borough.

In tracing the sources of infection, it was found that 24, or 50 per cent. of the patients belonged to the vagrant class, hence the difficulty of determining the probable place of infection. This fact indicates that a great source of danger lies in this class of persons who delight in their wandering habits, and readily become walking vehicles of infection from one lodging-house or workhouse to others, and in my mind some legislation in checking these wanderers would not be a hardship. We resorted to increased and frequent visitation of Common Lodging Houses, and almost daily inspection of some such places.

Four cases occurred in persons living in private lodgings at the time of removal to the Hospital. The remaining 20 cases came from private houses. With respect to these 24 cases, in 11 of them the date of infection was traced to places outside the Borough, and from these, three persons were probably infected, while in eight instances the infection could not be traced and these gave rise to two cases.

In no instance did the disease extend beyond the premises first infected.

With regard to sex, an analysis of cases shows that 38 males were attacked as against 10 females, which simply means that men are more exposed to contact with infected persons.

With respect to the age incidence of small pox, of the 48

cases, 17 occurred amongst persons aged from 20 to 30 years, 16 in those between 30 and 40, 6 between 40 and 50, 4 between 50 and 60, and three between 60 and 65, giving a total of 46 cases amongst persons over 20 years of age. The remaining two cases were under 12 years of age, one a child of five years unvaccinated, and the daughter of an anti-vaccinator who very wisely had the rest of the family vaccinated; the other a boy of 12 years, practically unvaccinated, because, although subjected to the operation in infancy, "the vaccination did not take." He had been in close contact with a small pox patient who had arrived from Bradford with the rash in the pustular stage. This person intended sailing for a sea-side resort on the morrow to fulfil a concert hall engagement. The history of the occurrence of small pox at different ætal periods affords an interesting argument in favour of vaccination and re-vaccination. In pre-vaccination times the slaughter of the innocents by small pox was terrible, but how different now, although in the Reports of Health Officers one sometimes reads: "The child was unvaccinated; had the disease in a confluent form and died."

In considering the influence which vaccination has upon small pox individually, I feel justified in reporting that the severity of the attack with its attendant disfigurement by pitting, and consequent detention in the Hospital, were pretty well in ratio to the condition of vaccination exhibited by the marks in the patient. These facts formed matter for observation by the patients, and were acknowledged by them.

Twelve patients were unvaccinated. In two the cicatrices were very doubtful, six had one mark, and 15 had two marks, eight had three marks, and four had four marks, while one patient, supposed to have small pox, was pitted freely from an attack in boyhood.

In my report of 1892, a tabular statement was submitted as to the probable condition of the protection afforded by vaccination in the Borough, and in that table it was shewn approximately that less than $2\frac{1}{2}$ per cent. of the children born in the Borough remained unvaccinated, so that to account for emigrants and immigrants we will not be far

wide of the truth if we estimate the unvaccinated at 3 per cent., while 97 per cent. of the people have been more or less efficiently vaccinated, that is to say 2,955 have not been vaccinated, and constitute therefore a standing danger to the infection of small pox, while 95,600 odd possess at least the modifying power of even imperfect vaccination. If vaccination possessed no preventive influence, the incidence of small pox would be the same amongst the vaccinated and the unvaccinated, and 97 per cent. of the patients admitted into hospital would be furnished by the vaccinated, and three per cent. of the unvaccinated, in other words there should be one unvaccinated patient for each 33 vaccinated. But this is not so in our experience, for during 1893, we find that 26 per cent. of the cases occurred amongst the unvaccinated excluding the two doubtful cases of vaccination, while 74 per cent. arose amongst the vaccinated, that is to say out of 2,955 persons as compared with 95,600, one unvaccinated case occurred for every three cases amongst the vaccinated, instead of one of the former to 33 of the latter.

Two persons who had been in contact with small pox were re-vaccinated but too late to avert the disease yet there were justifiable grounds for surmising that the severity of the disease was mitigated. All the other persons re-vaccinated remained free from the disease.

Of the 48 cases 2 were fatal giving a low mortality of 4 per cent. One a woman *æt* 54 with no visible signs of vaccination, and the other a child 18 months unvaccinated. If any convincible anti-vaccinationist could have witnessed the horrible condition of both patients—features swollen beyond recognition, and covered from head to foot with loathsome smelling scabs, and totally incapable of doing anything for themselves, I do think he would have seriously reconsidered his position. The disease can appear as hideous as it did in the last century amongst the unvaccinated of to-day. The following photographs taken from life by myself afford ocular demonstration, and these are by no means the worst cases treated.



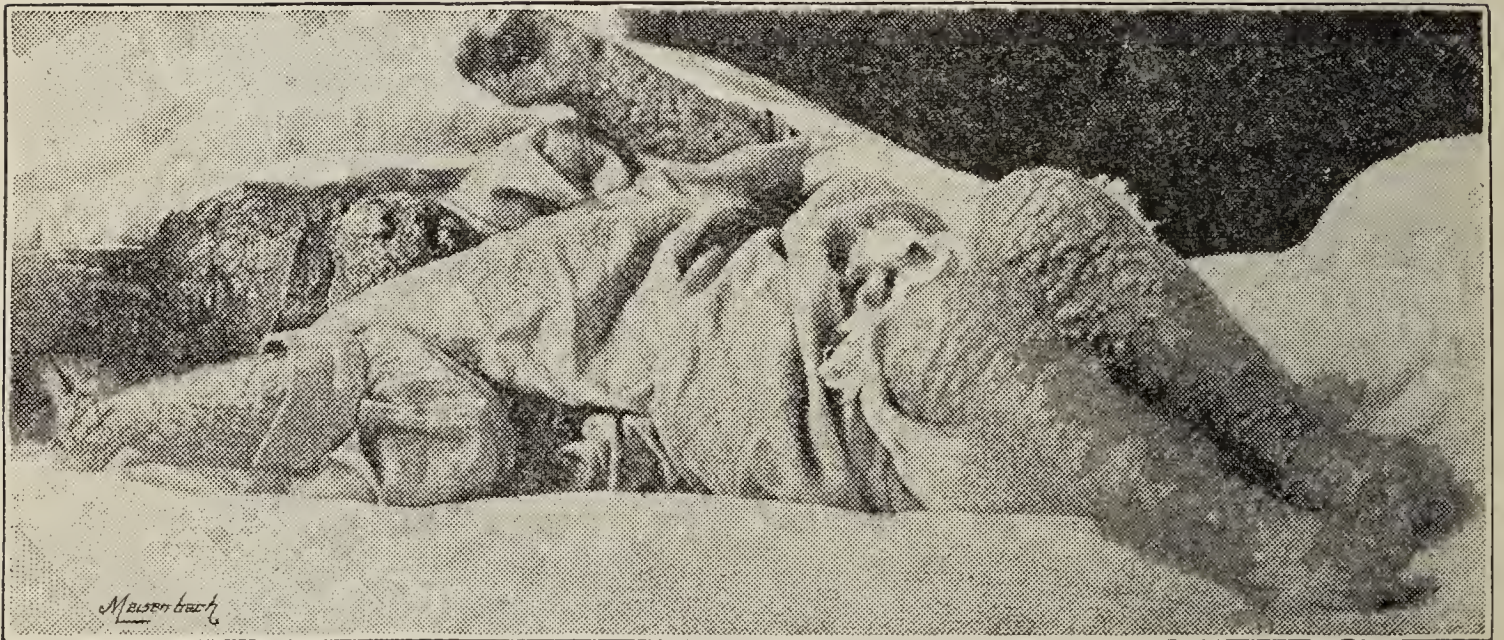
CASE OF SMALL POX.

Aet 24. Unvaccinated. 9th day of eruption.



SMALL POX.

Aet 24. Unvaccinated. 10th day of eruption.



SMALL POX. (Fatal).

Child 18 months old. Unvaccinated.



CASE OF SMALL POX.

Aet 34. Three Vaccination Marks.

(Two good one poor.)

Our action for the limitation of the disease has been as follows :—

- (a) Instant removal of all cases.
- (b) Disinfection of the premises by sulphur fumes.
- (c) Disinfection of all materials therein, and the removal of all clothing and bed linen, &c., to the steam disinfecter.
- (d) Bathing and disinfection of all other inmates in the house at the Hospital.

- (e) Purification of the premises by cleaning.—Soap given gratis.
- (f) Free vaccination.
- (g) Constant home supervision of the other members of the family, and their intercourse with others forbidden, and as far as possible prevented.
- (h) Compensation to the workers.
- (i) Assistance to neighbouring districts in the way of disinfection and advice.
- (j) Warnings by bill posters.

Some difficulty was experienced at Lodging Houses. At midnight the whole of the clothing of persons sleeping in the infected rooms were taken to the steam disinfector and returned in time to allow the men to go to work.

Measles.

During the 52 weeks of 1893, 25 deaths were ascribed to this disease against 68 in the previous year and 107 in 1891. The quarterly distribution of the disease was 12 deaths for the first, 6 in the second, 3 in the third and 2 in the fourth. I have several times reported upon the advisability of scheduling this disease for compulsory notification, which would surely assist us in upsetting the popular prejudice in favour of the children having it when young.

The subjoined tabular comparison of the fatality during the past 3 years from Scarlet Fever, Whooping Cough and Measles, shews that Measles has been twice as fatal as Whooping Cough and nearly three times as disastrous to young life as Scarlet Fever. The Table further reveals the large disproportion of the fatality amongst those under and those over five years of age in all three diseases, and these figures confirm our argument to parents “if you insist upon

your fatalistic doctrine of "necessity," by all means delay the attack as long as possible.

	1893.			1892.			1891.			TOTALS.		
Deaths from.	Under 5	Over 5	Total.	Under 5	Over 5	Total.	Under 5	Over 5	Total.	Under 5	Over 5	Total.
Scarlet Fever ..	16	9	25	10	8	18	21	9	30	47	26	73
Measles	23	2	25	65	3	68	101	8	109	189	13	202
Whooping Cough	12	1	13	30	..	30	57	1	58	99	2	101

Lockwood, the Central, and Marsh districts suffered most. The only district free from a death from this disease was Dalton.

Scarlet Fever.

The year 1893 must be classed as a decidedly epidemic year as far as this disease is concerned. It was never generally prevalent throughout the Borough, but occurred as localized outbreaks in several districts, first of all in Lockwood, then in Almondbury, and next in the West Ward, affording illustrations of the spread of the disease by contaminated milk, by the scholars of a particular school, and by gossiping women. The history of scarlet fever as it has occurred in the various districts of the Borough is interesting, and if carefully examined affords valuable aid in enabling the Health Department to look ahead. Just as in 1892 we foretold the probable prevalence of Scarlet Fever in Almondbury and Lockwood districts; we this year expect most of our cases from Fartown and Lindley.

The time incidence of the disease has been of more than ordinary interest during 1893, inasmuch as climatic conditions markedly influenced its prevalence. A review of past figures on this point testifies that during the last 10 years the

notifications have been most numerous in the third quarter, next so in the fourth, then in the second, and least in the first, but in 1893 the second quarter heads the list with 188 cases heard of, and this deviation may be accounted for by the early fine weather which began at Easter. During the first quarter 81 cases with four deaths were recorded, followed by 188 cases with six in the second, 130 cases and six deaths in the third, and 180 cases with nine deaths in the fourth, equal to a total of 579 cases, of which 25 were fatal. This fatality is equal to 4·3 per cent., against 5·3 per cent. of 1892, and 8·8 per cent. of 1891, and I look upon this improvement as the result of prompt notification, and consequent early treatment in the Hospital, which implies that hospital nursing is superior to home nursing. I say nursing because the treatment is more a question of care and attention than the administration of drugs. The mortality in the Hospital was 3·3 per cent. of the patients admitted, against 11·7 per cent. of those treated at home. Of the 25 fatal cases, 16 occurred in children under five years of age, and nine in persons above that age. Of the 16 under five years of age, eight were under two, four reached three, and four four years, while only one fatal case aged over 10 years.

With regard to the age incidence, this has also presented interesting features. In popular opinion this disease is associated essentially with childhood, but it has been seen that adults are not unfrequently the victims of it, for 83 cases occurred in persons aged 15 years and over, of these, 33 patients were between 20 and 30, and 10 over 30 years. The mortality in relation to these figures points clearly to this, that the chances of recovery increase with each year of life. The household incidence was as follows :—

One case each in	297	households	...	297	cases.
Two cases	„	88	„	...	176 „
Three	„	23	„	...	69 „
Four	„	8	„	...	32 „
Five	„	1	„	...	5 „

that is, the 579 cases occurred in 417 households. I have been much impressed by the apparent successful results in the limitation of Scarlet Fever, by

- (a) house-to-house visitation,
- (b) by special examination of all absentees,
- (c) by simultaneous examination of all scholars at school in the district of the outbreak.

During the year 1,406 houses have been visited by the Inspectors. This inspection consists in drafting the whole or several of the Inspectors into the one district for a day or two.

At Berry Brow	45	houses	were	so	visited.
Dalton	60	„	„		
Lockwood	96	„	„		
Almondbury	282	„	„		
Central	421	„	„		
Lindley	26	„	„	and	so on.

In these 930 houses 151 cases of some kind of illness were found and in 33 per cent. of them a medical man was in attendance.

These inspections were the means of bringing seven true cases, unattended by any medical man, out of 28 cases which presented some suspicious symptom or symptoms, to my notice. In all cases information was obtained as to the milk supply, and to show the complexity on this point, in a street of some 30 houses, 12 milk vendors supplied 20 houses while several of these along with the remaining ten obtained a mixed supply.

Several noteworthy instances came to our knowledge of the infection being conveyed amongst relatives living apart in extreme corners of the Borough. In one case an aunt, who is a mother of seven children walked 3 miles "just to have a look at her niece suffering from Scarlet Fever before the child was taken to the Hospital." She returned home and within 48 hours two of her children sickened with the disease.

Table showing the number of cases of **Scarlet Fever** known to have existed in Huddersfield, during the years 1884—1888 and 1889—1893, with cases heard of in the several quarters of these years, and the deaths registered from the same disease; also the average cases and deaths per quarter in the five years 1884—1888 and 1889—1893.

Quarters.	1884*		1885		1886		1887		1888		Average of five years 1884-1888.		1889		1890		1891		1892		1893		Average of five years 1889-1893.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
I.	36	3	28	1	91	9	45	4	128	13	66	6	72	3	29	1	46	4	71	3	81	4	60	3
II.	30	1	43	2	96	6	72	5	86	9	65	5	119	6	28	1	76	7	100	6	188	6	102	5
III.	24	2	89	6	130	10	178	2	62	4	97	5	107	15	73	3	113	11	102	6	130	6	106	8
IV.	33	1	91	2	53	8	231	20	50	1	92	6	57	2	71	2	106	8	81	3	180	9	99	5
	123	7	251	11	370	33	526	31	326	27	320	22	355	26	204	7	341	30	354	18	579	25	367	21

* The quarter in each case, except the fourth for 1884, is calculated as 13 weeks. In estimating the average number of cases in the fourth quarter of 1884, which comprised 14 weeks, 2·4 cases have been deducted from the 33 heard of in this quarter. No correction is however made on account of the average of the whole year. For death-rate, see Table VII. in Appendix.

Diphtheria.

It is pleasant to report that this malady so commonly associated with defective drainage shows the smallest number of notifications during the past five years and with regard to the mortality it is the lowest yet recorded in the sanitary life of the Borough. During the year 13 cases came to our knowledge with 3 deaths, in 1892 21 cases with 7 deaths, in 1891 19 cases with 5 deaths, and in 1890 21 cases with 5 deaths.

These figures must be considered with reserve, because mild cases are not readily recognised; while on the other hand, other throat affections are reported, since it leads to the flushing and disinfecting of the house drainage, and an examination of the premises. This action on the part of my medical brethren I encourage, for many defects are made known to the Health Department which are too commonly disregarded until danger appears; and the inclusion of any suspicious cases is certainly beneficial to the public, and it is far better to err on the safe side.

Whooping Cough.

This disease occasioned the deaths of 13 children, 12 of them under five, and one over five years of age. It was in the closing months of the year when the severity of the disease was aggravated by the colder weather that the greatest mortality was observed, but the disease was present in the Borough throughout the year.

Enteric Fever.

The deaths from this disease amounted to 14, of which number 8 were registered in the last quarter, 4 in the third, and one each in the first and second quarters. In Table VII. one death from simple fever has been included under this

heading. It has been a matter of comment that a number of the cases ascribed to this disease though undoubtedly presenting typhoid symptoms were simply notified as such for want of a definite diagnosis. In regarding the death rate from this disease as a trustworthy and sensitive test of the sanitary condition of a district we must not forget this source of error in the want of uniformity of nomenclature.

There is also another point, the accidental introduction of cases. During the past few years a number of prominent townsmen have been attacked by this disease, and in several of the cases the date of probable infection has been spent outside the Borough, for example. one fatal case infected when at a farm on a shooting expedition, and probably from drinking water from a draw-well near to a cesspool, another fortunately not fatal, likely enough infected by drinking contaminated water in Ireland. Seaside resorts have again contributed to this mortality, and during last year three cases at least, are supposed to have arisen at such places.

The 57 cases reported or heard of with 7 exceptions were isolated or sporadic cases throughout the Borough. The Central district produced 13, Almondbury 11, and Longwood 7 cases. One is not surprised that the Central district should head the list, but when two rural districts like Almondbury and Longwood show the next highest mortality not only in this disease but also in diarrhoea, it points to some local defect. The extension of sewers now being carried on will materially help to improve defects in drainage which now exist.

Fifty-seven cases were notified with a mortality of nearly 23 per cent., or a death-rate of 0·14 per 1,000 of the inhabitants. Of 57 patients 34 were males, and 23 females.

Ten of the cases occurred in houses with water-closets, 10 where the old midden system existed, and 35 from premises with the pail system in use. In most of the premises some sanitary defect of one kind or another was found, *e.g.*, sink

direct trapped or untrapped, or drains of the filthy stone walled type. In two cases the water closet and pails were in use.

Of the 57 patients 48 drank corporation water, while 7 were supplied from wells, not taking into account the period of absence from the Borough, in which I have already noted a number of patients were probably infected.

Two cases occurred on a canal boat from Huli, where the mother and a child had been removed to the Infectious Hospital there suffering from the same disease. The patients were removed to Birkby. The boat cabins were disinfected, the water butts emptied and disinfected also, and the whole of the clothing on deck passed through the steam apparatus.

A small outbreak of some seven cases occurred at Nettleton Hill in the Longwood District. This hamlet is perched on the hills above the Longwood Reservoir. A house to house visitation brought to light several suspicious cases. Although there was abundant evidence of a want of sanitation here and there amongst the people, I looked for some common cause. The milk supply was soon spotted, and the place of its infection. On visiting the farm house I found a girl who had been ill for some weeks just recovering, while three other members of the same family were ailing, one of them a female age 20, seriously ill, with all the symptoms of Enteric Fever. To reach the dairy or keeping place, the milk had to be taken through the sick room.

The milk and cream found in the house were destroyed, and the whole of the family excluded from the shippon which was taken charge of by a stranger, and the milk for some weeks given to the pigs. Only two cases, not typical, occurred after this action.

The habits of the people in the hamlet are somewhat primitive, slops are thrown indiscriminately around the dwellings, and in several places the drainage, such as it is, flows into disused quarries to soak away out of sight, and

surface accumulations of filth are common. Some folks “neither go outside the camp nor do they use a paddle,” but the back of the nearest wall seems most convenient.

The means of prevention adopted were as follows :—

- (a) House to house visitation.
- (b) Distribution of Handbills containing instructions.
- (c) Clearance and disinfection of ashpits and privies, and the provision of special tubs to cases of suspicious illness.
- (d) Establishment of a dépôt for disinfectants.
- (e) As removal to the Hospital was inadvisable the services of the district nurse, kindly provided by Sir William Broadbent and others for the poor, were taken advantage of.
- (f) Stoppage of the milk from the infected farm house.
- (g) Microscopical and Chemical Analysis of the water.

One of the most important measures in the prevention of this disease consists in the systematic flushing of house drains either by hand or by hose pipes connected with the mains, preferably by the latter, where the Corporation water supply has been provided. The flushing of the drains of houses where enteric fever has arisen is carried out within 12 hours of notification, and at various intervals afterwards if the patient remains at home. But this action is like “barring the door after the steed has been stolen.” The infective germs of the disease are contained in the discharges from the bowels of the patient and in better class houses may find their way through the water-closet into the drains, with the result that they there meet a favourable breeding soil and ultimately may be carried with the sewer gas through any small crack or opening, or defective trap in the drainage of another house, into the larder, the bedrooms, or living rooms, and there give rise to other cases of this insidious disease. Sewer gas is not always so offensive as it is dangerous, and defects in drainage may exist for some considerable time. Householders should be satisfied of the satisfactory condition of the drainage and then keep clean by flushing.

Table showing the number of cases of Enteric Fever known to have existed in Huddersfield during the two periods 1884—1888 and 1889—1893, with cases heard of during the several quarters of the years of these periods, and the deaths registered, also the average cases and deaths per quarter in the five years 1884—1888 and 1889—1893.

Quarters.	1884		1885		1886		1887		1888		Averages of five years 1884-1888.		1889		1890		1891		1892		1893		Averages of five years 1889-1893.	
	Cases	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
I.	13	.	19	4	13	3	7	1	15	2	13	2	10	1	14	9	4	1	6	1	10	1	9	2
II.	11	3	15	1	9	2	4	1	11	3	10	2	14	4	2	3	5	4	1	1	3	.	5	2
III.	24	3	20	3	9	2	18	3	11	4	16	3	16	4	20	5	19	4	10	3	21	4	17	4
IV.	39	4	12	2	14	5	19	4	19	2	21	3	10	1	26	6	10	6	5	1	23	8	15	4
Year.	87	10	66	10	45	12	48	9	56	11	60	10	50	10	63	23	38	15	22	6	57	13	46	13

In comparing these figures we must not forget the increase of population.
For the death-rates see Table VII. in Appendix

Diarrhœa.

The unusually severe mortality from Diarrhœa, has been an outstanding feature in the death causes during 1893 throughout the country, and our experience in this Borough has been in accord with the general increase. For the first time during the past seven years Diarrhœa has been the most fatal of the seven commoner infectious diseases. During the five year period from 1884 to 1889, the death-rate from Diarrhœa was 0·6 per 1000, while the 52 deaths which occurred in 1893 were equal to a death rate of 0·53 per 1000. The climatic conditions during 1893, requisite to bring the germ of this disease into actual and dangerous activity prevailed, and the figures in the following Table serve to show the influence of temperature and rainfall upon the prevalence of this disease, and depict pretty clearly a close relationship. Forty-five of the fifty-two deaths occurred in the third quarter of the year, viz :—9 in July, 23 in August and 11 in September, while of the remaining nine deaths six occurred in the second and three in the fourth quarter, leaving the first quarter blank. These figures are much in accordance with the recognised behaviour of this disease, giving the Summer incidence of the disease the special name of Summer Diarrhœa.

Statistics as to Meteorology in relation to the prevalence
of Diarrhœa.

Summer Quarter of	Mean Tempera- ture.	Departure from the Average Mean.	Number of Deaths.	Quarterly Death- rate per 1,000 inhabi- tants.	Rainfall (inches) for the	
					Quarter.	Year.
1880	60°	+2.9°	50	2.45	11.93	40.6
1884	59.4°	+2.3°	38	1.77	6.20	29.4
1886	58°	+0.9°	30	1.36	8.56	30.6
1893	59°	+1.9°	45	1.85	6.37	28.7
Average of 15 years, 1879-1893	57.1°	—	23	—	8.47	33.6
			8			
1879	55.6°	-1.5°		0.40	10.89	33.8
1888	55.2°	-1.9°	8	0.39	8.55	40.9
1892	55.7°	-1.4°	13	0.54	8.04	33.4
1889	56.2°	-0.9°	20	1.04	8.93	30.3

In the above table the four highest and the four lowest thermometric temperatures for eight summer quarters are compared with the average of the 15 year period 1879-93. These figures afford a valuable corroboration of the deductions arrived at by Dr. Ballard. It is quite clear that temperature plays a strong influence on the prevalence of Diarrhœa. During the four years 1880, 1884, 1886 and 1893, when the death-rates from this disease were highest, the temperature was considerably above the average of the 15 years. Column III. gives the deviation from the average and shows that the four years 1879, 1888, 1889 and 1892, which recorded the least mortality, also registered temperatures much below the average. The relationship of temperature to mortality, during the remaining seven years of the fifteen under review,

although not shown in the table, also exhibited a corresponding result.

The influence of rainfall can also be studied and it is noticeable that in the four years of highest mortality the rainfall for the summer quarter exceeded the average of the 15 years on two occasions, but if the total rainfall for the year is considered, then only once did it pass the average in those four years, while in the other four years with least mortality the rainfall was less variable and did not deviate far from the average. Of the two factors producing Diarrhœa, temperature effect is certainly most constant, and this simply means that temperature may be said to be synonymous with decomposition, the higher the temperature the greater the decomposition in soil, air, and food, and vice-versa.

Mortality from other Diseases.

Amongst the principal forms of lung disease, bronchitis contributed 250, phthisis (consumption) 165, inflammation of the lungs 151 and pleurisy 6. Consumption alone caused a death-rate of 1·70 as compared with 2·11 of the previous year. Bad ventilation if not a means of actually causing this disease at any rate is active in influencing any hereditary tendency, and so the influence of Consumption is remote as well as immediate in its action, for not only does it at once produce a rich harvest of death but scatters the seeds for future growth. It does seem strange that so many seem careless of the air which they breathe and yet careful of their food and drink. A special enquiry into the mortality from this cause has been begun. Other forms of tuberculosis for example tubercular meningitis, tabes-mesenterica—the consumption of infants,—were certified as the causes of death in 26 cases, while amongst the 165 deaths from consumption only one death was certified as due to that cause in persons under five years of age. Diseases of the respiratory organs claimed 362 victims, equal to a death-rate of 3·72 against 345 or a rate of 3·58 in 1892. Illness from these diseases is undoubtedly affected and rendered more fatal by local insanitation, *e.g.*, atmospheric impurity, but a direct cause of chest complaints is

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The diagram gives in comparative form the deaths from those diseases which have caused the principal amount of mortality during 1893.

Bronchitis	Consumption (Tuberculosis)	Pneumonia	Heart Diseases	Diseases of Stomach and Bowels	Cancer	Old Age	Apoplexy	Debility, Inanition	Inflammation of Brain	Diarrhoea	Convulsions	Diseases of Kidneys	Premature Birth	Violence	Influenza	Measles	Scarlet Fever	Rheumatism	Whooping Cough	Enteric Fever	Diseases of Bladder	Diphtheria	Small Pox
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represents Deaths from Infectious.

Ordinary Diseases.

Influenza.

found in the damp houses and damp cellars, so general throughout the Borough. In one district alone out of 43 houses in one road inspected, the enormous proportion of 27 houses had water in the cellars. Besides this, there are the general conditions, such as the ever varying samples of weather, wind and temperature in every 24 hours, which render it difficult to adopt all suitable precautions.

Cancer of one kind or another resulted in 80 deaths, against 75 in 1892 and 78 in 1891. These 80 deaths following this dreadful disease attacked the liver in 15 cases, the stomach in 24, the womb in 12, the bowels in 6, while the remaining 21 cases occurred in such organs as the kidney, the spleen, the bladder and female breasts.

Heart diseases were credited with 115 deaths, equal to a rate of 1.18 against 132 or a rate of 1.37 in 1892.

The deaths connected with child-birth numbered only eight, which gives a low death-rate of 3.4 per 1000 living births.

Violence, under which heading are noted eight cases of suicide, contributed 36 deaths to the total mortality. The deaths due to causes not capable of classification under any distinct disease amounted to 134, of which 59 were assigned to debility.

Influenza, which I have included amongst the Specific Febrile Diseases was certified as the cause of death in 32 cases, five of them under five years of age and 27 over that age. This disease was credited with 50 in 1892, and 111 in 1891. It is to be hoped that with a disease so apparently uncontrollable this decline in the number of deaths is an evidence of its future absence. It is an every-day experience in the examination of patients to hear "I have not been right since I had the Influenza."

The disease presented no features differing materially from those during its prevalence in 1891, except that it was neither so widely spread nor so disastrous in its effects. As in

previous years this disease was most fatal during the cold weather, aggravating the pulmonary form of the disease. Thus 14 deaths were recorded in the fourth quarter, two in the third, eight each in the second and first.

HOSPITAL.

I have to report a considerable increase in the number of cases admitted into the Fever Hospital, due partly to the excessive prevalence of Scarlet Fever, and partly to the popularity of the Hospital, especially amongst those who can appreciate such a blessing. At the end of 1892, 53 cases remained in the Hospital, but during 1893, 577 cases were admitted making a total of 630 cases treated during the year. The main stress of the work occurred during the fourth quarter, when it was very heavy indeed, there being as many as 110 cases in the Hospital at one time and several of them severe ones. This unusual number of patients taxed our limited accommodation and ill suited arrangements to the very uttermost, besides causing much mental and physical strain upon the staff. The number of patients admitted during the fourth quarter, rose so rapidly as to necessitate the whole of the wards being reserved for Scarlet Fever alone. Fortunately there were only one or two cases of Enteric Fever and several of them of a very doubtful nature, so that the wards for that disease were utilised to meet the rush of Scarlet Fever cases. Extra cots were also added which increased the accommodation until the cubic space per patient was reduced to 1000 cubic feet. Altogether in the fourth quarter 150 cases of Scarlet Fever were admitted, and of these 47 were admitted in 14 days. Of the 577 cases out of a total of 684 cases of infectious disease notified, 87 per cent. was isolated in the Hospital. Forty-eight cases of Small Pox were removed in the early part of the year to Birkby Fever Hospital, but in May the new Small Pox Hospital, at Mill Hill, was opened for the treatment of patients. The separation of cases of small pox outside the premises for the

treatment of scarlet fever, was indeed a great relief to the staff and with the experience in such places as Sheffield, Warrington, and Leicester, the removal was not accomplished a moment too soon. Of the 630 cases treated 499 were discharged and 21 died, leaving 110 under treatment.

Of 579 cases of scarlet fever, 511 or 89 per cent. were isolated, resulting in a mortality of 3·3 per cent. against a home mortality of 11·77 per cent., a wide margin, in proof of the value of hospital nursing. The maintenance of patients has been the subject of frequent consideration, and it has been very wisely arranged by the Committee that in those instances where the patient is removed for the public good, then no charge is to be made and this practically means free admission. A number of patients have been admitted whose relations were willing to pay for their treatment in private wards, but this could not be arranged. In anticipation of the settlement of this much discussed infectious hospital, the retaining of the red pavilion at Birkby for private patient would be invaluable and amply repay the expenditure. Not until every case of Scarlet Fever has been removed for hospital isolation can we fairly judge of the full value of notification. The benefits of isolation to, say, 45 or even 60 per cent. of the cases notified, must in many instances be counterbalanced by the 55 or 40 per cent. remaining at home because isolation outside an infectious hospital, is, with very few exceptions farcical. From my investigations I believe very few patients would be treated outside, if proper private accommodation was provided for the patient and the mother at a reasonable charge for maintenance.

The following is the Report of patients in the hospital for 52 weeks ended Saturday, 30th of December, 1893.						
	Small pox.	Scarlet Fever	Diphtheria	Enteric, or typhoid Fever	Other, or doubtful cases	Total
Number in hospital on Saturday, 31st of December, 1892	1	51	...	1	...	53
Number since admitted	48	511	...	10	8	577
Number discharged	47	437	...	7	8	499
Number Died ...	1	17	...	3	...	21
Number remaining in hospital	1	108	...	1	...	110

Comparison of Quarters.

The first or Winter quarter of the year 1893, recorded the lowest rate of mortality for that period in the sanitary history of the Borough, and with the years 1888 and 1878, formed the third occasion of the death-rate in the first quarter appearing below 20 per 1000. This fortunate result was chiefly accounted for by the mildness of the weather reducing the infantile mortality, and the mortality from diseases of the respiratory organs.

According to the Registrar General, Huddersfield on four out of the thirteen weeks recorded the lowest death-rate amongst the 33 Large English Towns. In the month of January the death-rate ranged from 12·84 to 20·86, in February from 12·84 to 21·93, in March from 17·65 to 24·07 per 1000 of the inhabitants.

In the second quarter, the Borough maintained a low death-rate, and only once in 1890 (16·44) had a lower death-rate been observed. As in the previous quarter the infantile mortality was the lowest noticed for these periods. Although the rate of mortality in the third quarter was only 16·46, there are several instances of a lower death-rate in the records of the Borough, for the corresponding period.

The death-rate of the Autumn quarter was a favorable one, and lower than that of the corresponding period of any previous year with the exception of 1891 and 1892. It may be noticed that in each quarter, the figures in each column for 1893 of the Borough are without exception lower than those of the 33 Large English Towns.

From these remarks it will be observed that Season plays an important part, so that the year's meteorology should be considered in connection with the distribution of the mortality over the four quarters.

Table showing the rates of Mortality in Huddersfield for the year 1893, and **each of its quarters**, from all causes, from the seven zymotic diseases, from consumption and other lung diseases, and the ratio of the Deaths in children under one to a thousand births in the same periods, with the corresponding Death-rates in the 33 great towns.

Quarter.	HUDDERSFIELD.				33 TOWNS.		
	All Causes.	Seven Zymotics.	Consumption, &c.	Children under one per 1,000 births.	All Causes.	Seven Zymotics.	Children under 1.
I.	18.28	0.90	6.75	125	22.01	2.00	145
II.	17.28	0.99	5.80	131	19.85	2.77	158
III.	16.46	2.59	3.58	171	21.86	5.42	250
IV.	17.73	1.15	5.56	136	22.67	2.56	174
Year 1893	17.43	1.38	5.42	141	21.60	3.18	181

SIMILAR TABLE FOR 1892.

Quarter.	HUDDERSFIELD.				33 TOWNS.		
	All Causes.	Seven Zymotics.	Consumption, &c.	Children under one per 1,000 births.	All Causes.	Seven Zymotics.	Children under 1.
I.	21.56	1.08	7.52	180	25.84	2.32	177
II.	18.70	1.54	6.69	187	19.51	2.55	138
III.	14.96	2.15	3.77	97	17.94	3.50	186
IV.	17.33	1.33	4.87	153	19.46	2.18	154
Year 1892	18.14	1.53	5.69	152	20.69	2.64	164

Table showing **new cases** of one or other of the seven commoner zymotic diseases, and of lung diseases, treated as out-door paupers, or as home patients of the Infirmary, during the 52 weeks of 1893 and each of its quarters.

	Total Cases.		Small Pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Continued Fever.			Diarrhœa.	Consumption.	Other diseases of the breathing organs.	Consumption and other lung diseases together.
	All diseases.	Seven zymotic diseases.						Typhus.	Typhoid.	Febricula.				
I.	300	17	2	2	..	1	9	..	..	..	3	12	113	125
II.	248	13	1	2	2	..	3	..	..	..	5	20	64	84
III.	218	34	..	1	..	..	2	..	..	1	30	11	30	41
IV.	256	10	..	3	..	..	1	..	..	..	6	15	74	89
Year 1893	1822	74	3	8	2	1	15	..	..	1	44	58	281	339
Per cent. of all cases.	6.24	0.03	0.03	0.08	0.02	0.01	1.47	..	..	0.01	4.30	5.68	27.50	33.17

TABLE, SIMILAR TO THE LAST, FOR 1892.

	Total Cases.		Small Pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Continued Fever.			Diarrhœa.	Consumption.	Other diseases of the breathing organs.	Consumption and other lung diseases together.
	All diseases.	Seven zymotic diseases.						Typhus.	Typhoid.	Febricula.				
I.	397	26	..	17	2	..	3	..	2	..	2	15	129	144
II.	241	28	..	18	2	..	4	..	..	1	3	12	77	89
III.	204	15	..	3	1	..	1	..	..	..	10	12	43	55
IV.	234	11	..	3	..	..	5	..	..	..	3	11	71	82
Year 1892	1076	80	..	41	5	..	13	..	2	1	18	50	320	370
Per cent. of all cases.	7.43	..	..	3.81	0.46	..	1.21	..	0.19	0.09	1.67	4.65	29.94	34.39

Meteorological Report, 1893.

I am indebted to Mr. James Firth, the Cemetery, for these notes and for other information which he has always most obligingly given. Following these notes is an abstract of the meteorological conditions observed during 1893.

The extraordinarily fine, warm summer, and the strong gales of wind in the autumn of 1893, will cause the year to be classed as one of the remarkable years during the past half-century.

January was not marked by any abnormal specific features of elemental disturbance. The 1st was ushered in with frost, rain, and snow on the morning of the 5th. The thermometer on the grass registered 22 degrees of frost, on the 7th four inches of snow fell. Frost, snow, and rain alternated with occasional fine days during the whole of the month. The highest barometrical pressure—reduced to sea level—was 30·22 inches on the 11th, the lowest 29·20 inches on the 29th. The greatest velocity of the wind was on the 21st, 35 miles per hour, with a pressure of six lbs. to the square foot. Rain fell on 15 days, registering 1·18 inches. The mean temperature 35·1 degrees.

February: The greater part of this month was dark and cloudy, with one exception rain fell on the first 17 days, accompanied with strong gales of wind. Sunday, the 26th, was a terrible day, snow fell to the dept of six inches. The highest barometrical pressure was on the 5th, 30·16 inches, the lowest 28·60 inches, on the 26th. The greatest velocity of the wind was 57 miles per hour, with a pressure of 16 lbs. to the square foot. Rain fell on 23 days, registering 4·40 inches. The mean temperature 38·9 degrees.

March commenced with a dark, cloudy, rainy morning, which continued all day. During the next 13 days very little rain fell. On the 15th, 16th, and 17th rain and snow fell heavily. This was the last “kick of winter.” On Saturday, the 18th, we experienced a decided change. The fine, clear, warm sunny weather that followed will be for ever memor-

able in the annals of meteorology. The highest barometrical pressure was on the 25th, 30·30 inches, the lowest 29·25, on the 1st. The greatest velocity of the wind, 35 miles per hour, with a pressure of seven lbs. to the square foot. Rain fell on eight days, registering 1·19 inches. The mean temperature 44·2 degrees.

April, like the latter part of March, was abnormal in all its proverbial characteristics, with the exception of the first day; not a drop of water fell up to the 16th, consequently there were no "April showers." But the fields and gardens were beautiful with a profusion of masses of blossom of nearly every description of flowering plants. The sun shone nearly every day with a brilliant but softening splendour. Thunder and lightning occurred on the 20th. During the latter part of the month cirrus-clouds often dappled the upper regions of the sky with light fleecy masses, which did not long hide the rays of the sun. The highest barometrical pressure was 30·40 on the 8th, the lowest 29·80 on the 30th. The greatest velocity of wind was 44 miles per hour, with a pressure of 10 lbs. to the square foot. Rain fell on six days, registering 0·96 inches. The mean temperature 48 degrees.

May: Slight rainfall on the 1st and 2nd. For the next 13 days no rain was registered. On the 16th and up to the 20th rain fell on each day, accompanied each time with thunder. The general features of the weather were warm and genial. The highest barometrical pressure was 30·35 inches, on the 6th; the lowest 29·40, on the 18th. The greatest velocity of wind was 29 miles per hour, with a pressure of four lbs. to the square foot; rain fell on 10 days, registering 0·92 inches. The mean temperature 53·6 degrees.

June was very remarkable month, and presented phases in its thermal conditions that are not generally observed in one of the hottest months of the year. The minimum night temperature never descended lower than 43 degrees, and rose as high as 58 degrees. On Sunday, the 18th, the thermometer in the shade registered 85 degrees, in the sun

125 degrees. The highest barometrical was 30·30 inches on 10 days, registering 2·26 inches. The greatest velocity of the wind 28 miles per hour, with a pressure of four lbs. to the square foot. The mean temperature 58·7 degrees.

July, which is generally considered the hottest month in the year, was characterised by a uniform run of high temperature. Equatorial winds again predominated, the rainfall was the heaviest since the month of February. The highest barometrical pressure, 30·18 inch, was on the 28th ; the lowest, 29·40 inches, on the 20th ; the rainfall on 16 days registering 2·62 inches. The greatest velocity of the wind, 30 miles per hour, with a pressure of $4\frac{1}{2}$ lbs. to the square foot. The mean temperature 60·3 degrees.

August : We now arrive at the maximum heat during the year. Warm equatorial winds, suffused with a large amount of atmospheric humidity, prevailed. Rain fell more or less every day on the 11th ; from the above date to the 18th no rain fell ; on the latter date the heat of the sun culminated. The thermometer in the shade registered 87 degrees, and in the sun 126 degrees. From the 25th to the 30th, inclusive, no rain fell. The highest barometrical pressure was 30·17 inches, on the 21st. Rain fell on the 13 days, registering 1·55 inches. The mean temperature 62·7 degrees, 2·4 degrees higher than that of July. The greatest velocity of the wind was 32 miles per hour, with a pressure of five lb. to the square foot.

September : The oppressive heat of last month had gradually decreased to a more equable temperature. The rainfall, though still below the average, was not so apparent, as evaporation had considerably decreased, and the humidity in the atmosphere consequently increased. On the 23rd, heavy rain, hail, thunder and lightning occurred. The highest barometrical pressure, 30·30 inches, was on the 3rd, the lowest, 29·05 inches, was on the 29th. The greatest velocity of wind 35 miles per hour, with a pressure of six lb. to the square foot. Rain fell on 16 days, registering 1·69 inches. The mean temperature 53·8 degrees.

October: We now arrive at a termination of a long, dry, hot summer. After the first two days the thermometer fell rapidly; still it remained very high for the time of the year. Equatorial winds predominated the whole of the month. The greatest barometrical pressure, 30·20 inches, was on the 19th, the lowest, 28·90 inches on the 3th. The greatest velocity of the wind, 58 miles per hour, with a pressure of 16 lbs. to the square foot. Rain fell on 16 days, registering 2·35 inches. The mean temperature 49 degrees.

November: This month presented aspects of a varied and opposite character. Strong gales of wind, hail, rain, snow, and thunder, ushered in the elemental warfare, which may be divided into two parts, the first extending up to the 16th, though wet, and the atmosphere suffused with moisture, was comparatively calm. On Friday, the 17th, the barometer fell rapidly from 29·74 inches to 28·80 inches—sea level—the wind blowing with a force of only four lb. to the square foot. On the morning of the 18th, the wind varied from north-west to north-east, and came in voluminous blasts like the roar of thunder. The greatest barometrical pressure was 30·28 inches, on the 12th; the lowest 28·30 inches, on the 18th. The greatest velocity of the wind 60 miles per hour, with a pressure of 18 lbs. to the square foot. Rain fell on 23 days, registering 2·42 inches. The mean temperature 40·5 degrees.

December: The meteorology of this month, if not a repetition, very much resembled that of the preceeding month. Equatorial winds again prevailed during the greater portion of the month. On the 2nd and 3rd ten and eight degrees of frost were registered respectively. From the latter date to the 8th, wild stormy weather, with occasional strong gales, occurred. On the 12th rain fell heavily, from the 18th to the 26th (with one exception) rain fell on each day. On the 26th we experienced a change, and an anti-cyclone commenced and continued during the next four days. It enveloped the whole of the British Islands, and ran the barometer up to the highest point during the year. Anti-cyclone areas are distinguished from the cyclonic by light

winds, low temperature during the night, a minimum humidity in the atmosphere, the absence of rain, and the prevalence of fog. The last day of the year, though fine and sunny, brought with it prognostics of a change. The barometer fell from 30·56 inches to 29·92 inches. The wind veered to the west, and freshened into a sharp breeze. The greatest barometrical pressure, 30·56 inches, from the 26th to the 30th, the lowest 28·25 on the 20th, or a range of nearly two inches for the month. The greatest velocity of the wind 40 miles per hour, with a pressure of eight lbs. to the square foot. Rain fell on 17 days, registering 3·74 inches. The mean temperature was 40·9 degrees.

During the year rain fell on 177 days, registering a total of 25·28 inches.

The average annual mean temperature for the Borough during the previous ten years has been 46·6. For the same period and corresponding averages the barometer registered 29·77 inches, the diurnal range 13·4, and the mean humidity 70·8 per cent.

The mean temperature for the year in the Borough was 48·8. The average annual mean temperature of Greenwich has been 49·9 degrees, or only 1·1 degree above the mean in our latitude for the past year.

Abstract of Results for the Year 1893.

1893. MONTH.	Mean Barome- ter, inches.	Mean Ther- mometer of	Mean Diurnal Range of F	Mean Height Earth Ther- mometer 4ft. 6in.	Mean Height Earth Ther- mometer 2ft. 6in.	Mean Moisture of Air, %	Total Rainfall (inches)	Prevail- ing Wind.	Velocity of the Wind, miles per hour.	Highest recorded Tempera- ture in the sun.	Highest recorded Tempera- ture in the shade.	Lowest recorded Tempera- ture in the night.	Lowest recorded Tempera- ture on the grass.	Total number of Deaths.
January ...	29.84	34.0	7.2	41°	35°	69.8	0.23	SEE TABLE X	25	60°	41°	24°	20°	127
February	29.50	40.1	7.8	40°	38°	72.7	1.07		35	81°	53°	30°	27°	122
March ...	29.81	43.5	15.5	40°	41°	59.8	0.38		31	94°	58°	27°	24°	195
April	30.09	48.7	22.6	43°	45°	51.0	0.14		15	104°	67°	33°	30°	137
May	29.94	53.6	18.7	49°	54°	53.8	0.42		26	111°	71°	38°	34°	168
June	29.92	59.3	19.0	51°	58°	56.0	0.51		14	117°	79°	45°	42°	115
July	29.83	60.3	17.0	54°	60°	57.2	0.60		24	113°	74°	45°	43°	109
August ...	29.90	62.4	17.4	56°	61°	59.0	0.45		23	118°	75°	48°	43°	166
September	29.60	53.3	15.6	55°	56°	62.5	0.42		28	107°	66°	38°	33°	125
October ...	29.78	50.0	12.6	53°	50°	65.5	0.58		37	105°	62°	37°	34°	115
November	29.82	40.0	9.4	48°	44°	73.4	0.49		42	73°	52°	27°	25°	160
December	29.63	41.6	9.4	44°	40°	77.2	0.93		38	69°	50°	30°	30°	156
Average	29.72	48.8	14.4	48°	49°	63.8	6.67		28	96°	62°	35°	32°	1695

The following Tabular Statement places the figures of Table VIII. in the order in which the several districts of the Borough stand with regard to the Death-rates from all causes, seven zymotic diseases, and diseases of the lungs.

All Causes.		Seven Zymotic Diseases.		Consumption and other Diseases of the Lungs.	
Lindley	13·28	Lindley	0·79	Fartown	4·03
Marsh	13·67	Dalton	0·81	Lindley	4·20
Deighton & Bradley	15·32	Fartown	0·83	Marsh	4·36
Fartown	15·52	Deighton & Bradley	0·85	Central	4·93
Dalton	15·65	Lockwood	0·97	Dalton	4·98
Central	16·46	Almondbury	1·06	Deighton & Bradley	5·11
Almondbury	16·49	Central	1·14	Lockwood	5·35
Lockwood	16·63	Marsh	1·41	Longwood	5·96
Longwood	17·35	Longwood	2·63	Almondbury	6·11

The figures are sufficiently explanatory, and as I hope to enter into detail in a future and early report upon the comparative health of the Districts during the past fifteen years I will only note several facts now.

It is apparent that the district death-rates do not vary very materially, still that a rural district like Longwood should be at the bottom in the mortality from all causes and the seven zymotic diseases is somewhat unexpected, and practically the death-rate from diseases of the respiratory organs are alike in Longwood and Almondbury. It is to be hoped that the main sewers with their consequent branch drainage will exert a beneficial effect in diminishing this mortality. It has been ably shown by Dr. Buchanan that a close connection exists between the mortality from Consump-

tion (Phthisis) and the condition of the soil. In one part of the Longwood district 50 per cent. of the houses were found to have water in their cellars at one time or another during the year, and this shows the importance of early sewerage. The clayey subsoil with houses erected on sloping ground render the foundations and walls of the houses, especially those with no damp course which few possess exceedingly damp, thus favouring the two classes of disease too rife here, namely, diseases of the chest and rheumatism.

The neighbouring district of Lindley occupies the most favourable relative position, and this is probably due to its position and its attention to sanitary matters.

It may be well to record here the re-arrangement of the Duties and Powers of the Health and Sanitary Committees.

Duties and Powers of the Sanitary Committee.

To execute and perform in the name and on behalf of the Council but subject to the Standing Orders of the Council and to confirmation by the Council all the powers and duties of the Corporation in relation to the following :—

Scavenging of Streets.

Removal and Disposal of Nightsoil and Refuse.

Public Urinals and Conveniences.

Nuisances.

Offensive Trades.

Control of Drains, Privies, Ashpits and Cesspools.

Buildings and rooms unfit for Habitation.

Polluted Wells.

Adulteration of Food and Drugs.

Unwholesome Food.

Cowsheds, Dairies and Milkshops.

Superintendence of the Department of the Medical Officer of Health (in conjunction with the Health Committee.

Duties and Powers of the Health Committee.

To execute and perform in the name and on behalf of the Council but subject to the Standing Orders of the Council and to comformation by the Council all the powers and duties of the Corporation in relation to the following :—

Main Intercepting Sewers and Sewage Disposal Works.
Agreements with other Authorities as to the disposal of
Sewage.

Cleansing of Sewers in Central District.

Storm overflow Sewers in the Central District.

Infectious and Epidemic Diseases.

Hospital and Infectious Diseases.

Common Lodging Houses.

Cleansing of Infected Houses.

Prevention of pollution of Rivers and Streams.

Health Statistics and Sickness and Mortality Returns.

Superintendence of the Department of the Medical
Officer of Health (in conjunction with the Sanitary
Committee).

SANITARY WORK.

The record of work accomplished compares favourably with that of previous years, and the ordinary sanitary operations of the department have received unremitting attention. A systematic daily inspection has been made of each of the four districts including the inspection of infected houses, of cowsheds, bake-houses, and other premises included in the summary of nuisances investigated during 1893. Constant supervision is necessary to prevent the formation of nuisances and the recurrence of those which have been abated. Anyone studying the statistics of sanitary work year after year may marvel at the large number and endless variety of defects still found on inspection. Much of this is due to the errors in the application of the commonest principles of sanitary science, but a large proportion are due to bad workmanship. It is perfectly farcical at times to meet landlords who will actually tell you that the drains of a particular house were laid by Mr. So and so, who was an excellent workman, 20 years ago. Seldom, or never, do they think of the analogy between the chimney and the drains, the former requiring periodic cleansing and repairing, and at times alteration to prevent down-draughts, but in the matter of drains in the owners' opinion they require no further attention, while from a sanitary view, drains should receive equally as much attention by periodic flushing and testing, even if not subject to smells, to deposit, or choking.

It is a source of great satisfaction that the system of preliminary letters introduced two years ago has worked so well, because it is an evidence of what a little tact and persuasion on the part of an Inspector can do. In no case during the year was it necessary to resort to magisterial proceedings for the abolition of a nuisance, and only 123 statutory notices were served for the abatement or abolition of nuisances, showing that sanitary remedies are now more readily performed.

During the year 1893, the Health and Sanitary Committees and Sub-committees met wholly or in part on 122 occasions. This enable those less intimately connected with the work of the department to judge roughly of the amount of attention demanded of the Members constituting these Committees to the sanitary matters of this Borough, while the items in the following summary display the variety of work dealt with by the department, and reported at the Committee Meetings.

The urgent question of the disposal of ashes and refuse, although frequently and prominently under consideration during 1893, demands an immediate and settled line of action. The amount of refuse consumed at the Hillhouse Distructor was approximately 15,000 loads or nearly 13,000 tons, leaving 37 per cent. of clinkers, in other words each cell destroyed five tons per day.

An erroneous notion has got abroad that excremental matters are cremated also, but this is not so. That matter is collected in pails and disposed of as manure, a system as costly as it is laborious, and each year's experience goes to show that the sooner water carriage is adopted the better, both for the health and pockets of the community.

Householders can assist us greatly in keeping the ashpits and pails for their proper purposes, and thereby render as harmless as possible those nurseries of disease germs.

SUMMARY.

COMMITTEE.						Totals.
Inspection of premises for Nuisances	..	..	..	..	..	1856
Do. premises where offensive trades are conducted					..	139
Do. Workshops	..	..	..	..	..	362
Do. Schools	..	..	..	..	..	13
Do. Slaughter Houses		..	..	..	..	28
Do. Canal Boats	..	..	..	..	..	113
Do. Dairies and Milkshops	..		..	..	..	24
Do. Cowsheds	..	..	..	..	..	287
Do. Bakehouses	..	..	..	..	..	26
Do. Markets	..	..	..	..	..	daily
Do. Show Vans	..	..	..	..	..	119
Do. premises where no nuisance was found				..	..	911
Total number of Inspections of Premises						3878

Revisits to work in progress	1333
Visits to see if notices are being attended to	511
No. of premises visited where Zymotic diseases have occurred ..	575
Do. inspected do. do. ..	575
Do. disinfected do. do. ..	577
Do. flushed do. do. ..	592
Do. visited searching for Fever	1406
Total number of visits to infected houses	1237
Do. re-visits where cases are isolated at home ..	508
Infectious diseases reported	636
Cases removed to Hospital	576
Number of articles disinfected by Lyon's disinfecter	14135
Do. houses cleansed, repaired or whitewashed	4
Do. premises flushed by request of owners (paid for) ..	241
Other premises, yards or courts flushed	2314
Preliminary notices to owners	454
Owners seen personally	426
Number of legal notices issued for abatement or abolition of nuisances	123
Notices handed over to Borough Surveyor's Department by request of Committee.	29
Notices handed over to Borough Surveyor's Department by request of owner	45
Letters written	1306
Nuisances reported at Sanitary Office	81
Nuisances inspected	81
Summonses taken out	12
Smoke observations taken	166
Old Privies abolished	120
Number of Tub Closets registered	411
Do. applications received to empty Ashpits	977
Do. do. Tubs	128
Do. Receptacles emptied	467,009
Do. wells abolished	
Do. visits under Food and Drug Acts	98
Meat, seizures made or destroyed	4 carcasses of Cow, 12lbs. beef, 2 pigs, 2 cwt. tripe.
Fish	
Fruit	18 cwt. Damsons, ½ cwt. Apples, 68 Cocoa Nuts.
Food and Drugs—samples purchased	81
Do. do. adulterated	5
Water samples taken for analysis	10
Do. polluted	1

Houses unfit for Habitation.

A number of houses, which although declared uninhabitable were considered repairable have been revisited, and several of them found to be satisfactorily put in order. Under the Local Bye-laws two houses were certified as unfit by me and were afterwards closed by the Council. Overcrowding was noticed in six houses and rectified.

Common Lodging Houses are under police supervision, and as far as we have seen general conformity to the requirements of the Bye-laws has been maintained therein, several of them shewed signs of dampness, but that will be remedied.

The 119 inhabited show vans coming into the Borough have been kept under inspection, their condition was, upon the whole, satisfactory, but the air space in a number of them was deficient.

Workshops.

Hitherto our action has been chiefly directed against self-evident sources of diseases, such as bad ventilation, overcrowding, and insufficient water supply, while those influences such as habit and occupation, the effects of which are quite as serious have not received that attention which they deserve, probably because of the feared interference with trade. During 1893, 372 workshops were visited and a record made of the condition found, with regard to (*a*) hours of labour, (*b*) nature of business, (*c*) persons employed, (*d*) sex and age, (*e*) rooms, their position, size, light, ventilation, and cleanliness, (*f*) food, (*g*) closet accommodation, (*h*) drainage, (*i*) illness, etc.

The conditions under which workers of all kinds live are highly important, for the worker should carry out his labours under conditions of maximum health and comfort. The inspection therefore of workshops to enforce the principles of Hygiene cannot but exert a valuable influence upon those

diseases fostered in the insanitary workshop. We know that the deplorable mortality from consumption is greatly influenced in this way. Generally speaking the majority of the workshops were fairly good, but cooking and dining in the workshops and the use of gas apparatus for heating or for ironing, without proper means for carrying away the products of combustions are highly injurious. In several, overcrowding was noticed, and a reduction of the number of workers insisted upon. In many of these the improvements suggested have been carried out. The number of workshops reported to the Medical Officer of Health, by the Government Inspector, J. D. Prior, Esq., is increasing, and all this means more work for the staff.

The following statement is a list of the various trade premises inspected :—

Trades.				Total.
Dressmakers and Milliners	...			82
Tailors	...	...	...	54
Boot Makers	...	...	...	56
Joiners ...	...	...	...	32
Blacksmiths and Wheelwrights	...			24
Cloggers	...	...	...	9
Tinners	...	...	...	12
Monumental Sculptors	...			10
Whitesmiths and Engineers	...			6
Cabinet Makers	...	...	...	7
Manufacturing Chemists	...			3
French Polisher	...			4
Stocking Knitters	...	...	...	6
Rope Makers	...	...	...	5
Saddlers	...	...	...	8
Plumbers	...	...	...	5
Locksmiths	...	...	...	3
Jewellers	...	...	...	3
Rag Merchants	...	...	...	4
Upholsterers	...	...	...	3

Trades.				Total.
Brushmakers	...	...	...	2
Coopers	...	...	...	3
Hearthrug Works	...	...	...	2
Window Blind Maker	...	...	...	1
Furniture Makers and Brokers	...	...	...	2
Basket Makers	...	...	...	6
Mungo Dealers	...	...	...	3
				<u>355 + 17 = 272</u>

One each of the following : — Organ Builder, Brass Finisher, Wagon Cover Maker, Bicycle Maker, Scale Repairer, Ticket Maker, Wire Worker, Sugar Boiler, Firewood Maker, Tube Maker, Warper, Laundry, Tallow Chandler, Frame Maker, Mill Furnisher, Composition Maker, Currier.

Huckster's Shops.

The increase in the number of small shops or rather the exhibition of articles of sale such as oranges, apples, vegetables, soda water, and toys in the windows of private houses is noticeable. The vendor not unfrequently sleeps in the same room on a "chest bed" which is closed up immediately the occupant arises in the morning. The objections to this are obvious. Further he or she may be consumptive—a disease now looked upon as contagious—or the children may suffer from any infectious disease. The increase of these shops in the absence of any provisions for the proper carrying on of the business is neither conducive to the health of the inmates or the public.

COUNTY BOROUGH OF HUDDERSFIELD.

Canal Boats Acts, 1877 and 1884.

Report of the working of these Acts during the year ended December 31st, 1893.

To the Huddersfield Urban Sanitary Authority.

During the year 1893, particular attention has been paid to Canal Boats on account of some apprehension of the conveyance of Cholera from infected places, like Hull, and 94 canal boats have been inspected against 53 of the previous year.

These boats came principally from Hull, Goole, Wakefield and Mirfield and the whole were found generally speaking in a satisfactory condition.

The cargoes, as in years gone by, consisted principally of Timber, Logwood and general articles of merchandise.

The population found on board these boats numbered 290 persons and of these 59 were children of the following ages :

1893, Ages of Children found on Canal Boats.

Ages	MONTHS.			YEARS.												TOTALS
	4	6	9	1	2	3	4	5	6	7	8	9	10	11	12	
Number.....	1	3	1	2	8	4	8	6	3	7	5	2	4	3	2	59
Males.....	1	3	1	2	7	3	4	3	2	2	2	2	3	2	2	40
Females ...	...	.	...	...	1	1	4	3	1	5	2	...	1	1	...	19

Annexed are particulars of the information specially desired by the circular dated 29th December, 1893, issued by the Local Government Board and herein replied to seriatim.

- (1) The No. 1 District Inspector of Nuisances is appointed Inspector under the Canal Boats Acts. The remuneration is included in his salary as Inspector of Nuisances.

- (2) 94 Boats, including 54 broad boats, 39 Flyboats, and one narrow ; of these 60 had been registered at Goole, 24 at Mirfield, four at Hull, and six at various other places, so that all the boats inspected were registered.
- (3) The **infringments** of the Acts and regulations with respect thereto were as follows :—

- (a) Registration. (None).
- (b) Notification of change of master. (Two). One had our notice complied with and returned in due time, the other has given no reply.
- (c) Certificates. Absence of certificates. (Seven). Two of these the notices do not expire until January 21st, 1894; the certificate has since been produced in one case, while in four instances no notice has been taken of the forms sent to them but several communications have been received relative to those whereby any prosecution would be weakened.

On their journey to Huddersfield, the Boats are subject to inspection at Hull, Goole, Wakefield, Mirfield and other places, and it is rather surprising to find boats which have arrived here from these places transgressing the provisions of the Acts in having no certificate of registration on board to produce throughout the journey.

- (d) Marking. (Three). One boat has since been marked and numbered, while two have taken no notice of the forms sent to them so far as we can ascertain.
- (e) Overcrowding. (None). Although in one instance the sleeping accommodation was certainly unfitted for children. The 94 Boats inspected were registered for the accommodation of $546\frac{1}{2}$ persons but only 290 persons were found occupying the cabins.

- (f) Separation of sexes. (None). The ages and relationship of the dwellers in the 94 boats did not necessitate separation.
- (g) Cleanliness and ventilation. Only six of the cabins might be described as dirty and orders were given to thoroughly clean them out and this was afterwards found to have been performed.
- (h) Painting. (Four). No notice taken of the forms sent to them. This is an item which should receive more attention as there is a difficulty in proving an infringement.
- (i) Provisions of water cask. No infringement, casks generally clean and free from visible pollution.
- (j) Removal of bilge water. All well free from bilge water.
- (k) Notification of infectious disease. The notification of two cases of Enteric Fever were heard of by telegram from the Sanitary Authority of Wakefield, who reported that there was no accommodation at their Hospital. Both cases were removed to the Hospital as soon as they arrived here on the 7th of October when active measures were taken to prevent any spread of the disease. The food was destroyed, the water casks emptied and disinfected, the bilge water was also disinfected and the clothing of the other members put through the steam disinfecter at Birkby.

In these two instances the discharges from the patients were thrown, as is usually the case, into the river on their way from Wakefield. It worthy of consideration whether this pernicious habit could not be minimised or abated by some directions being issued at the time of registration.

(*l*) Admittance. In no case was the Inspector refused.

(4). No legal proceedings taken.

(5). Notice forms are sent to the owners requesting the contraventions to be remedied and then returned them within a specified time signed by some other Canal Boat Inspector. All cases are reported to the Sanitary Committee.

During the past year arrangements have been made through the kindness of the L. & N. W. Ry. Company, whereby there Lockkeeper at the the entrance of the Huddersfield Canal notifies daily all boats passing up the canal.

(6). Two cases of Typhoid Fever taken to the Hospital and Boat thoroughly cleaned and disinfected. (See *k*).

(7). (None). One disinfected during cargo unloading.

(8). (None).

(9). (None). No registration.

Dairies and Cowsheds.

The compliance with regulations has been attained as far as possible, and remissness in the whitewashing of shippens has almost entirely disappeared. The remarks of former reports as to the unsuitability of a large number of cowsheds are still applicable. Two hundred and eighty seven cowsheds, and 24 milkshops were inspected during the year. Fortunately in the majority of cowsheds the milk is not stored but taken away soon after milking for distribution.

The cowsheds and cows on several farms have been examined by the Medical Officer on account of some suspicions in connection with infectious disease, but in none of the cows was there any trace of disease found. In one outbreak the milkman was stopped and another supplied to distribute the milk, and apparently with good results, at any-rate the outbreak abated in that milkround. It may be that the milkman who was supplying two infected houses had

himself got infection either in his clothes or cans. I omitted to say that in addition to stopping him, fresh cans were provided. In some places objection was made to the empty milk cans, mouth downwards, being left in the cowsheds over night, because the milk was likely poured into them without any previous swilling in the morning. In one instant it was proved that this action caused the milk to become sour more rapidly, probably due to the decomposing organic gases in the cans. This objectionable practice has been stopped as far as we know.

Bakehouses.

The Bakehouses in the Borough have been carefully inspected and most of the sanitary defects have been remedied, while greater cleanliness prevails amongst them.

Smoke.

During the year 1893, 166 smoke observations have been taken, and possibly legal proceedings would have resulted in several cases had it not been on account of the coal strike. I daresay, that stokers knowing this were not so careful with the result that the average dense smoke for 1893 was a black one, and worse than for several years.

The following observations prove that this nuisance depends materially upon the stokers.

In No. 1 the stoker had fired up more frequently than Nos. 2 and 5, but still $13\frac{1}{2}$ minutes is far too much. Unfortunately in a large number of mills the stoker has other duties to perform, and he therefore piles on the coals at longer intervals, as seen in observation 2 and 3.

I have also selected, I might say at random, 24 observations, six from each of the four districts into which the Borough is divided for sanitary purposes, and these observations as can be gathered from the following table show that 24 chimneys emitted on an average 12 minutes dense, and 40 minutes moderate smoke in the 60 minutes, allowing only 8 minutes freedom from smoke for the atmosphere to recover its purity, and therefore leaving practically "nothing of God's free gift to poor man."

No. 1.				No. 2.				No. 3.			
Time. 10-35 to 11-35	SMOKE.			Time. 10-25 to 11-25	SMOKE.			Time. 10-20 to 11-30	SMOKE.		
	Dnse	Modt	None		Dnse	Modt	None		Dnse	Modt	None
10-37	2	..	..	10-28	3	..	..	10-36	..	6	..
10-38	..	1	..	..	..	..	..	..	..	..	..
10-40 $\frac{1}{2}$	..	..	2 $\frac{1}{2}$	..	..	..	..	..	..	..	..
10-41	..	$\frac{1}{2}$	..	..	..	..	..	10-40	4	..	..
10-43	2	..	..	..	..	..	..	..	..	..	..
10-44	..	1	..	..	..	..	..	..	..	..	..
10-49 $\frac{1}{2}$	..	..	5 $\frac{1}{2}$	..	..	..	..	10-44 $\frac{1}{2}$	..	4 $\frac{1}{2}$	..
10-50	..	$\frac{1}{2}$	..	..	..	..	..	10-49	4 $\frac{1}{2}$	..	..
10-51 $\frac{1}{2}$	1 $\frac{1}{2}$	..	..	..	..	..	..	..	..	..	..
10-53	..	1 $\frac{1}{2}$	..	..	..	..	..	..	..	..	..
10-56 $\frac{1}{2}$	..	..	3 $\frac{1}{2}$	..	..	..	..	10-54	..	5	..
10-57 $\frac{1}{2}$	..	1	..	..	..	..	..	10-57	3	..	..
11-0	2 $\frac{1}{2}$	..	..	11-0	..	32	..	..	..	..	..
11-1	..	1	..	..	..	..	..	..	..	..	..
11-3	..	..	2	..	..	..	..	..	..	..	..
11-4	..	1	..	11-4	4	..	..	..	..	..	..
11-6	2	..	..	..	..	..	..	..	..	..	..
11-7	..	1	..	..	..	..	..	..	..	..	..
11-9	..	..	2	11-10	..	6	..	11-14	..	17	..
11-18	..	9	..	11-1	1	..	..	11-19 $\frac{1}{2}$	5 $\frac{1}{2}$	..	..
11-20	..	..	2	11-16	..	5	..	..	..	..	..
11-20 $\frac{1}{2}$	..	$\frac{1}{2}$	..	11-18	2	..	..	..	..	..	..
11-24	3 $\frac{1}{2}$	..	..	11-25	..	7	..	11-28 $\frac{1}{2}$	..	9	..
11-35	..	11	..	..	..	..	..	11-30	1 $\frac{1}{2}$	..	..
Total..	13 $\frac{1}{2}$	29	17 $\frac{1}{2}$	Total..	10	50	..	Total..	18 $\frac{1}{2}$	41 $\frac{1}{2}$	..

The pollution of the atmosphere by the products of combustion is one, among the numerous questions with which we as sanitarians have to deal, requiring our most careful consideration, not only from a health point of view, but also on account of the difficulties surrounding our action in this matter of smoke nuisance. We are all impressed, I presume, with the importance of the subject, and convinced also that the inhabitants of large towns are living in endurance of an injurious and avoidable evil, which may truthfully be said to be one of the greatest nuisances of modern civilization. It is scarcely necessary for me to demonstrate the pernicious and far reaching influences of smoke. The indictments against smoke are well established and indubitable, though at the same time it must be admitted that to estimate by vital statistics the degree of culpability of smoke in relation to public health is no easy matter. In forming a judgement we must take a survey of the whole of the destroying effects of smoke, and its interference with personal comfort and health; its influence directly and indirectly in multiplying the numerous ills of frail humanity. Our respiratory organs, as every one of us can tell from personal experience, especially in times of fog, are converted more or less into temporary coalscuttles thereby producing a certain amount of the prevalent lung disease, but as I have already pointed out, we cannot speak dogmatically upon the point.

If it were necessary to complete the chain of evidence, I have only to point to the disfigurement of buildings; of art and landscape; its hindrance to ventilation; its destruction of vegetation and a thousand petty discomforts to which the people have become so accustomed as barely to notice them. The subject is, indeed, one of national importance, not only in relation to health and comfort, but to art, architecture, painting, decoration and furniture, both from an economical and aesthetic point of view.

The physical evils, such as absence of sunlight; the admixture of dust and vapours of various kinds and dirt, are sufficiently patent to every one, and no little expense is undoubtedly caused by this all prevailing grime.

Description of Works.	Where situated.	Date and Month.	No. of Boilers.	Time.			Total.	Height of Chimney.	Appliances if any.	How fired.	Additional duties of Stoker.	Working pressure of boiler.	Size of boilers.
				Smoke.									
				Dense.	Modt.	None.							
Dyeworks	Colne Road ..	April 28	3	9½	20½	..	30	45 yds.	Economiser	hand	none	2—75 lbs. 1—90 lbs.	1—30 ft. by 9 ft. 1—30 ft. by 7 ft. 1—28 ft. by 9 ft.
Dyeworks	Aspley	May 26	2	4½	25½	..	30	30 yds.	Louvered doors	hand	Engine man	2—40 lbs.	1—20 ft. by 7 ft. 1—24 ft. by 7 ft.
Dyeworks	Turnbridge ..	June 5	1	10	20	..	30	20 yds.	Economiser and Louvered doors	hand	none	1—60 lbs.	1—30 ft. by 7½ ft.
Cloth Finishers	George Street	May 30	1	4½	25½	..	30	33 yds.	Louvered doors	hand	Assists in other work	1—80 lbs.	1—24 ft. by 7 ft.
Rug Works.....	Viaduct Street	May 30	1	6	24	..	30	20 yds.	none	hand	Assists in other work	1—80 lbs.	1—30 ft. by 7½ ft.
Wood Sawyers.....	Seed Hill	June 1	1	6	24	..	30	60 yds.	Louvered doors	hand	Engine man	1—60 lbs.	1—14 ft. by 4½ ft.
Woollen Manufacturer	Birkby.....	April 28	2	8	14	8	30	35 yds.	Steam jets	hand	none	1—100 lbs.	1—30 ft. by 8 ft.
Woollen Manufacturer.....	Leeds Road N.	May 1	2	..	17	13	30	51 yds.	Self Feeder	hand	none	1—100 lbs. 1—60 lbs.	1—24 ft.
Dyers and Finishers	Leeds Road N.	May 30	2	4½	23½	2	30	42 yds.	Economiser	hand	none	1—60 lbs.	1—28 ft. by 7 ft. 6 in. 1—16 ft. by 5 ft. 6 in.
Yarn Spinners	Leeds Road N.	May 30	1	..	30	..	30	30 yds.	Self Feeder	mechanically	none	1—35 lbs.	1—27 ft. by 7 ft.
Woollen Manufactory	Deighton	June 6	2	1	29	..	30	45 yds.	Economiser	mechanically	none	1—45 lbs.	1—30 ft. by 7 ft. 6 in.

Cotton Spinners	Bradley	June 15	2	9	6	15	30	60 yds.	Economiser	hand	none	1-100 lbs.	1-30 ft. by 8 ft. 1-30 ft. by 7 ft.
Woollen Manufacturers	Lindley	May 2	2	10	20	..	30	50 yds.	Economiser	hand	Greaser	100 lbs. 68 lbs.	1-30 ft. by 8 ft. 1-27 ft. by 7 ft.
Woollen Manufacturers	Marsh	May 2	2	4	26	..	30	39 yds.	Economiser	hand	none	80 lbs. 50 lbs.	1-29 ft. by 7 ft. 1-29 ft. by 8 ft.
Spinning.....	Paddock	May 5	2	1	29	..	30	23 yds.	Economiser	hand	none	40 lbs. 65 lbs.	1-24 ft. by 7 ft. 1-24 ft. by 7 ft.
Woollen Manufacturers	Lindley	May 31	7	..	30	..	30	73 yds.	Economiser	Mechanical Stoker	none	80 lbs. 50 100 lbs.	1-8 ft. by 28 ft. 2 & 3-8 ft. by 30 ft. 4 to 7-8 ft. by 27 ft.
Yarn Spinning.....	Milnsbridge ..	June 8	1	11	14	5	30	35 yds.	Economiser	Mechanical Stoker	Engine Tender	100 lbs.	27 ft. by 7½ ft.
Brewery	Birchcliffe..	June 19	1	4	15	11	30	..	..	hand	Engine Tender	40 lbs.	18 ft. by 6 ft.
Woollen Manufacturers & Dyers	Moldgreen	April 28	2	10	5	15	30	36 yds.	none	hand	Engine Tender	50 lbs.	1-7 ft. by 28 ft. 1-7 ft. by 24 ft.
Woollen Manufacturers & Dyers	Moldgreen	April 28	2	7	6½	16½	30	43 yds.	none	hand	Engine Tender	40 lbs.	1-7 ft. by 28 ft. 1-7 ft. by 28 ft.
Cotton and Worsted Spinning	Lockwood	May 5	3	10½	14½	5	30	55 yds.	Economiser	hand	none	2-80 lbs. 1-100 lbs.	1-8 ft. by 28 ft. 1-7 ft. by 28 ft.
Cotton Spinning	Crosland Moor	May 8	4	11½	10½	8	30	50 yds.	Econ. Automatic doors, Steam Jets	hand	none	90 lbs.	4-7 ft. by 30 ft.
Machine Works	Lockwood	June 13	2	11	19	..	30	30 yds.	none	hand	none	1-55 lbs. 1-60 lbs.	1-7 ft. by 28 ft. 1-8 ft. by 21 ft.
Brewery	Lockwood	June 14	1	7	23	..	30	30 yds.	..	...	..	..	.....

Mechanical appliances do undoubtedly go a long way towards the cure of the smoke nuisance, but each appliance whether automatic air regulators, at the door or bridge, moving bars, self-stokers, steam jets or incandescent bridges, &c., requires to be applied under suitable conditions. The great bugbear is the sudden demand for steam in dyeworks, and breweries, &c., but nuisance from these might be abated by smoke purifiers instead of smoke preventors. It is simply a question of cost.

Various articles of food the details of which are given in the subjoined table were purchased and submitted to Mr. Jarmain for analyses. The results of these, as of former analyses, show that the Borough suffers very little from adulteration of food stuffs, and the same remark applies to unwholesome food.

Adulteration of Food.

The articles of food submitted during the year 1893, to the Borough Analysis were as follows :—

No. of Samples Purchased.	Kind.	No. sub- mitted for Analysis.	Genuine.	Adulter- ated.
61	Milk	60	56	4
4	Butter	4	3	1
1	Lard	1	1	...
2	Coffee	2	2	...
1	Mustard	1	1	...
69		68	63	5

Statement of the cases in which legal proceedings have been taken with respect to sample reported by the Borough

Analyst as adulterated, result of such proceedings, and of the respective amounts of the penalties inflicted excluding costs.

One Milk with 6% added water, 3% butter fat removed, fined 10/-, costs 7/-
 „ „ 8% „ „ „ „ 10/-, „ 9/-
 „ „ 5% „ „ „ „ 10/-, „ 9/-
 „ „ 15% „ „ „ „ 10/-, „ 7/-
 One Butter 6% in excess of water 10/-, „ 9/-

Unwholesome Food.

In the following statement are given the quantities and kinds of food condemned as unwholesome and destroyed during the year 1893.

1893.	BEEF.		PORK.	TRIPE.	FRUIT.
	Meat lbs.	Carcase.	stones.	cwts.	
1st qtr.	...	³ and all internal organs.	30	...	...
2nd „	12 lbs.	¹ and all internal organs.	10	...	...
3rd „	...	...	12	2	18cwt. damsons 64 cocoa nuts.
4th „	...	...	...	...	56 lbs. apples.
	12	⁴ and all internal organs.	52	2	

A number of animals, especially Irish pigs, have been examined by the request of the owners, and the advice of the Health Officers frankly accepted by them. This relationship with the department I hope to encourage.

It is worthy of record that two families were attacked by all the symptoms due to some irritant poison, and this poison upon investigation was proved beyond doubt to have been contained in pork pies consumed by both families, who purchased the pies from the same shop. There was nothing to find fault with in the pies as far as sight and taste could discriminate. Of a household of five persons, four partook of the pies, and they all suffered more or less severely, while the fifth member, accidentally away for the day, and did not taste the pies, escaped.

Offensive Trades.

Tallow rendering has on several occasions been the subject of complaint, and I am pleased to report that means have been employed to abate this nuisance.

Soap boiling has been complained of and this has been rectified by the manufacturers using a better class of fat, and also by conducting the steam which escapes in the process of boiling to the fire bars of the boiler.

Fish frying has also formed the subject of complaint. In investigating the matter I found that defective and badly constructed frying pans combined with the use of cheap oils—such as cocoa-nut oil instead of beef fat—were the chief causes of the sickening smells. The apparatus should be so constructed as to prevent the boiling fat lodging in any part outside the pan which gets hot and evaporates part of the oil while the remainder is burnt, producing the easily recognised smell. The pan should be moveable for cleansing purposes and when in use the spluttering oil should fall back again into the pan by means of a tin funnel projecting into the pan and fitting close to the edge of the pan. The increase in this trade has been great during the past few years, and it is now time that it was included amongst the offensive trades, although we can deal with the nuisance under Sec. 114, P. H. Act, 1875. Some of the premises in which fish frying is carried on are unsuitable, and this would be remedied by the necessity of registration,

The following figures relating to the meat trade have been kindly supplied to me by Mr. Matthewman.

Abattoir.	1889	1890	1891	1892	1893
Beasts.....	4035	3006	4046	3192	4554
Calves.....	2214	1765	2297	2449	2268
Sheep	13211	12632	13078	13482	15308
Pigs.....	4815	6555	7044	5960	5394
Carcases bought in	674	1003	814	1571	852
Private Slaughter Houses.					
Beasts.....	630	629	799	787	1127
Calves.....	325	230	371	518	790
Sheep	2258	1806	2619	3358	3073
Pigs.....	837	558	709	1035	919
Total	28999	28184	31757	32352	34285

The above table reveals figures of satisfaction and of disappointment. It is satisfactory to notice the increase in the slaughter of 1362 beasts over the previous year, and a decrease of 719 carcasses brought into the abattoir, but on the other hand we regret to observe a gradual increase until 1891, and the sudden rise of 346 in 1892 in the number of beasts slaughtered in private places. I know there has been three slaughter houses licenced since the annexation of Longwood which will partially account for this. Again there is an increase in the number of calves killed in private places, with a large decrease on the previous number of those killed at the abattoir. Although this is suggestive we have little reason for complaint, and I consider the meat supply of 1893 to have been exceptionally good.

In concluding I beg to thank the Chairmen and Members of both Committees for the encouragement and support accorded to me in the performance of my various duties. I have also to thank the staff of officers for their valuable assistance during the past year, because I can candidly say that the amount of work accomplished has not only greatly increased but has been performed with unusual earnestness and attention.

I feel bound also to take this opportunity to express my sense of gratitude to my brethren of the medical profession for the kind assistance which they have given to my efforts in combating the spread of infectious diseases, especially by the promptness of the notifications they have sent me, and the early intimations of suspicious cases.

JAMES R. KAYE,

Medical Officer of Health.

TABLE I.

Return of births and deaths registered during the 13 weeks ended April 1st, 1893.

DISTRICTS.	Census Population 1891.	Estimated Population at the middle of the year 1893.	Births Registered during the 13 weeks ended 1st April, 1893.	Deaths Registered during the 13 weeks ended 1st April, 1893.	INFANTILE MORTALITY.					Persons aged 50 years and upwards.	SEVEN ZYMOTIC DISEASES.								Rate of Mortality per 1000							
					Under 1 year.						Small Pox.	Measles.	Scarlatina.	Diphtheria.	Whooping Cough.	Fevers.		Diarrhoea.	During the corre- sponding period year previous.	During the 13 weeks ended 1st April, 1893.	During the corre- sponding period year previous.	During the 13 weeks ended 1st April, 1893.	7 Zymotics.	All Causes.		
					1 and under 2 years.	2 and under 3 years.	3 and under 4 years.	4 and under 5 years.	Typhoid.							Other.										
Huddersfield (Central)	25909	26278	166	122	17	4	4	2	..	45	..	..	..	..	3	..	..	11	33	12	9	54	21.91	18.63	1.68	0.46*
Marsh	8330	8517	49	40	9	2	1	..	..	16	..	..	..	..	..	..	..	4	10	1	5	16	17.17	18.85	0.48	1.88
Fartown	9584	9699	64	30	3	2	1	..	1	16	..	..	..	..	..	..	..	1	9	..	1	16	19.17	12.41	0.42	0.83†
Deighton and Bradley	2273	2358	8	13	2	..	..	..	..	6	..	..	..	..	..	..	..	..	4	2	1	5	13.86	22.13	..	1.70
Dalton	8413	8668	59	35	11	3	2	..	..	8	..	..	..	..	..	..	..	3	8	2	1	21	23.97	16.21	1.41	0.46
Almondbury	14856	15094	86	72	15	5	..	2	..	34	..	..	..	..	..	..	..	8	25	3	1	35	22.81	19.14	0.80	..
Lockwood	12076	12372	69	52	9	3	2	..	1	20	..	..	..	..	..	..	..	7	11	4	1	24	17.15	16.87	0.66	1.62†
Lindley	8575	8842	59	21	4	..	1	..	..	7	..	..	..	..	..	..	..	5	3	..	1	12	17.50	9.53	0.46	..
Longwood	5406	5724	32	22	5	4	..	..	..	8	..	..	..	..	..	..	..	1	9	2	1	8	15.59	15.43	..	..
Infirmary (Central)....	..	..	..	15	..	..	..	2	1	4	..	..	3	..	..	..	..	..	1	..	..	..	..	..	..	..
Hospital (Fartown)....	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Workhouse (Lockwood)	..	..	5	19	..	..	..	..	..	13	..	..	..	..	..	..	..	4	7	3	..	5	..	..	..	..
Borough	95422	97552	597	444	75	28	11	7	5	177	..	12	4	2	3	1	..	44	120	29	22	207	..	..	..	..
Rate per 1,000 of Esti- mated Population....	..	..	24.56	18.27	..	..	..	..	..	..	0.49	0.16	0.08	0.12	0.04	..	..	1.81	4.94	1.19	0.90	8.52	21.56	18.27	1.08	0.90

* Central, with Infirmery 20.92. † Fartown, with Fever Hospital 13.66. † Lockwood, with Workhouse 23.03.
Deaths of Children under one year per 1000 births, 125. Death Rate of 33 large English Towns, 22.01. Zymotic Death Rate of 33 large English Towns, 2.00.
Birth " " " 33.19.

TABLE III.

Return of Births and Deaths registered during the 13 weeks ended September 30th, 1893.

DISTRICTS.	Census Population 1891.	Estimated Population at the middle of the year 1893.	Births Registered during the 13 weeks ended 30th September, 1893.	Deaths Registered during the 13 weeks ended 30th September, 1893.	INFANTILE MORTALITY.					SEVEN ZYMOTIC DISEASES.										Rate of Mortality per 1000						
					Under 1 year.	1 and under 2 years.	2 and under 3 years.	3 and under 4 years.	4 and under 5 years.	Persons aged 50 years and upwards.	Small Pox.	Measles.	Scarlatina.	Diphtheria.	Whooping Cough.	Fevers.		Phthisis.	Bronchitis, Pneumonia, and Pleurisy.	Heart Disease.	Cancer.	All other Diseases.	All Causes.		7 Zymotics.	
																Typhoid.	Other.						During the corres- ponding period year previous.	During the 13 weeks ended 30th September, 1893.		During the corres- ponding period year previous.
Huddersfield (Central)	25909	26278	146	104	34	6	3	1	2	32	..	3	..	..	..	12	17	10	5	48	17.31	15.88	1.38	2.44*		
Marsh	8330	8517	39	25	4	1	1	..	1	9	..	..	..	..	4	3	3	4	..	10	15.26	11.78	3.82	2.36		
Fartown	9584	9699	51	37	9	3	..	..	1	13	..	..	..	..	3	2	2	1	2	25	10.83	15.31	0.83	2.07†		
Deighton and Bradley	2273	2358	7	9	1	..	..	..	..	6	..	1	..	..	..	4	4	..	2	5	8.66	15.32	..	1.70		
Dalton	8413	8668	60	30	5	1	1	..	..	16	..	..	..	..	..	4	4	4	2	11	10.34	13.89	1.41	2.31		
Almondbury	14856	15094	107	59	16	3	..	..	..	25	..	..	..	..	9	4	7	2	4	28	15.03	15.69	1.88	2.39		
Lockwood	12076	12372	65	42	8	3	1	..	..	16	..	..	..	..	5	4	4	5	2	22	10.89	13.62	2.64	1.30†		
Lindley	8575	8842	49	32	11	2	1	..	..	8	..	..	..	..	2	3	2	..	2	23	11.97	14.52	2.76	1.36		
Longwood	5406	5724	28	23	4	4	..	..	..	9	..	..	..	..	3	6	2	4	11	13.46	16.13	0.71	4.91			
Infirmary (Central)....	..	..	..	13	..	..	1	..	2	5	..	..	5	..	..	..	..	..	7	..	..	..	..	..		
Hospital (Fartown)....	..	..	..	6	1	..	..	..	..	..	..	..	..	5	..	..	1	..	..	10	..	..	..	..		
Workhouse (Lockwood)	..	..	9	20	3	..	..	..	..	11	..	1	..	..	1	..	1	..	..	..	..	..	..	..		
Borough	95422	97552	561	400	96	20	7	2	5	150	..	5	6	..	2	4	1	45r	42	30	20	200	..	..		
Rate per 1,000 of Esti- mated Population....	..	..	23.08	16.46	..	..	..	..	..	..	..	0.20	0.25	..	0.08	0.16	0.04	1.85	1.73	1.23	0.82	8.23	14.96	16.46	2.16	2.59

* Central, with Infirmary 17.87 † Fartown, with Fever Hospital 17.79. + Lockwood, with Workhouse 20.11.
Deaths of Children under one year per 1000 births, 171. Death Rate of 33 large English Towns, 21.86. Zymotic Death Rate of 33 large English Towns, 5.42.
Birth 31.55.

r NOTE.—Two of the 45 deaths placed under Diarrhoea were certified as due to "Cholera Nostras."

TABLE VI.

Classification of Deaths Registered in Calendar Year 1893.

[illegible]

[illegible]

TABLE VI.—Continued.

	Central Huddersfield.		Marsh.		Fartown		Deighton and Bradley		Dalton.		Almoud-bury.		Lockwood.		Lindley.		Longwood.		Infirmary		Hospital		Workhouse.		Totals.		TOTAL FOR BOROUGH.
	Under 5	Over 5	Under 5	Over 5	Under 5	Over 5	Under 5	Over 5	Under 5	Over 5	Under 5	Over 5	Under 5	Over 5	Under 5	Over 5	Under 5	Over 5	Under 5	Over 5	Under 5	Over 5	Under 5	Over 5	Under 5	Over 5	
Order 10—Integumentary System	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	2	..	..	..	..	..	..	1	1	1	2	
VII.—DEATHS FROM VIOLENCE.																											
Order 1—Accident or Negligence	1	7	..	1	..	2	1	..	..	..	..	..	1	1	2	..	..	..	..	9	..	..	1	5	23	28	
Order 2—Homicide	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Order 3—Suicide	..	4	..	..	..	..	1	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	8	
VIII.—DEATHS FROM ILL-DEFINED AND NOT SPECIFIED CAUSES.																											
1. Dropsy	..	1	..	1	..	..	..	1	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	3	4	
2. Debility, Atrophy, Inanition	22	1	..	3	..	1	..	..	3	..	..	..	4	..	..	..	2	..	..	..	..	..	1	56	3	59	
3. Mortification	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	2	5	
4. Tumour	..	1	..	..	..	1	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	5	6	
5. Abscess	..	2	..	..	..	..	..	1	..	..	..	..	..	1	1	1	..	..	..	..	..	1	1	6	5	6	
6. Hæmorrhage	..	2	..	..	..	1	..	..	1	..	..	..	..	1	1	..	..	..	..	..	..	..	..	1	5	6	
7. Sudden Death	1	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	1	
8. Causes not specified or Ill-defined	11	15	..	1	..	4	1	..	4	1	2	1	..	4	..	1	1	1	1	..	..	..	26	29	55	55	
TOTALS	135	296	85	81	48	102	12	24	50	85	77	171	58	147	49	68	35	64	3	47	12	10	6	80	520	1175	1695
TOTALS AT ALL AGES	431		116		150		36		135		248		205		117		99		50		22		86		1695		

TABLE VII.

Death Rate per 1,000 per annum for 1893 and nineteen previous years.

	Estimated Population at the middle of the Year.	From all causes. and at all ages.	Children under 1 year.	Children over 1 year and under 5 years.	In persons aged 50 years and upwards.	ZYMOTIC DISEASES.							Seven Zymotic Diseases.	Violence and Accidents.	Consumption and Diseases of the Breathing organs.
						Smallpox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Fever.	Diarrhoea.			
1893	97,552	17·43	3·34	2·00	6·66	0·02	0·26	0·26	0·03	0·13	0·14	0·53	1·38	0·37	5·42
1892	96,599	18·14	3·49	2·56	6·89	0·01	0·71	0·19	6·07	0·30	0·06	0·19	1·53	0·48	5·69
1891	95,656	22·96	4·51	3·50	8·62	..	1·12	0·31	0·05	0·62	0·16	0·11	2·38	0·66	7·64
1890	94,253	18·84	3·83	2·19	7·02	0·01	0·04	0·07	0·05	0·42	0·25	0·39	1·23	0·48	6·58
1889	92,825	18·79	4·15	2·78	6·33	..	0·98	0·28	0·13	0·16	0·11	0·36	2·02	0·38	5·95
1888	91,419	18·51	3·90	2·80	6·37	0·02	0·36	0·29	0·15	0·41	0·13	0·19	1·55	0·65	5·40
1887	90,034	22·99	5·06	4·42	6·70	..	1·39	0·35	0·46	0·68	0·10	0·41	3·39	0·51	7·26
1886	88,670	19·54	4·49	2·76	6·30	..	0·19	0·37	0·14	0·32	0·14	0·48	1·63	0·79	6·38
1885	87,327	20·05	4·62	2·84	6·79	..	0·65	0·13	0·05	0·29	0·11	0·20	1·42	0·74	6·50
1884	86,004	19·54	4·84	2·55	6·34	..	0·18	0·08	0·05	0·70	0·14	0·63	1·77	0·57	5·65
1883	84,450	21·38	5·14	3·09	6·52	..	0·39	0·08	0·04	0·55	0·18	0·44	1·68	0·58	7·65
1882	83,271	22·39	5·64	3·93	6·60	..	0·96	0·26	0·07	0·64	0·18	0·53	2·63	0·65	6·81
1881	82,113	20·35	4·67	2·82	6·54	..	0·09	0·21	0·04	0·42	0·13	0·38	1·26	0·75	6·50
1880	81,780	22·04	5·20	3·79	6·66	0·02	0·40	0·23	0·05	0·15	0·67	0·91	2·49	0·61	6·72
1879	80,245	22·95	4·87	4·50	6·92	..	0·56	1·10	0·09	0·41	0·28	0·34	2·78	0·66	7·64
1878	78,900	22·04	5·53	3·38	6·64	..	0·04	0·61	0·08	0·90	0·39	0·71	2·73	0·55	6·54
1877	77,600	22·37	5·34	4·01	6·19	{ ..	0·48 0·30	0·97 0·83	0·06 0·08	0·54 0·34	0·47 0·37	0·58 0·37	3·10 2·28	0·57 0·64	6·74 8·83
1876	76,072	23·18	5·14	4·12	6·67	0·03	0·21	1·13	0·05	0·30	0·38	0·67	2·78	0·72	8·47
1875	75,069	23·59	5·33	4·35	6·72	..	0·72	0·64	0·09	0·57	0·37	0·52	2·92	0·91	8·74
1874	74,150	21·39	5·05	3·86	6·15	0·04	0·40	1·05	0·23	0·20	0·32	0·47	2·73	0·96	7·35

The populations for 1884-1885-1886-1887-1888-1889 and 1890 are those estimated by the Registrar-General, by geometrical progression. The Populations for 1883, 1882 and 1881 are estimated by arithmetical progression, the two latter from the first published returns of the census of 1881. The populations of the earlier years are those estimated for those years at the time. The death-rates for 1880 are therefore probably one per cent., and those for 1879 and 1878, 0·5 and 0·3 per cent. too low. See Annual Report for 1882, p. 4, 5 note and p. 10 note, for 1883, p. 29, and for 1888, p. 16.

TABLE VIII.

DISTRICTS.	Birth-rate.	Mortality per 1,000 Persons Living at all Ages.																
		Children under 1 year.	1 to 5 years.	Adults over 50 years.	Seven Zymotic Diseases.	Constitutional Diseases (including Phthisis).	Phthisis.	Developmental Diseases.	Diseases of the Nervous System.	Diseases of the Circulatory System.	Diseases of the Respiratory System.	Digestive System.	Diseases of the Urinary System.	Diseases of the Reproductive System.	Violence.	Ill-defined and not Specified Causes.	Other Causes.	Total from all Causes.
Central (with Infirmary)	21.99	3.51	1.76	6.34	1.14	3.51	1.37	0.72	1.87	1.87	3.74	1.18	0.61	..	0.80	2.21	0.69	18.37
Central (without Infirmary).....	21.99	3.47	1.68	5.69	1.14	2.98	1.37	0.69	1.79	1.49	3.59	0.88	0.57	..	0.46	2.18	0.69	16.46
Marsh	22.62	2.94	1.18	5.30	1.41	2.36	1.41	1.29	2.71	0.71	3.06	0.59	0.35	..	0.12	0.82	0.23	13.67
Fartown (with Fever Hospital)....	25.86	3.10	3.10	6.31	3.10	3.10	1.24	1.14	1.86	0.93	2.90	1.14	0.41	0.10	0.31	2.17	0.62	17.79
Fartown (without Fever Hospital)	25.86	3.00	1.96	6.21	0.83	3.10	1.24	1.14	1.86	0.93	2.90	1.14	0.41	0.10	0.31	2.17	0.62	15.52
Deighton and Bradley.....	18.72	2.55	2.55	7.66	0.85	1.70	..	1.70	1.70	0.85	5.11	0.85	..	..	0.85	1.28	0.42	15.32
Dalton	27.71	3.94	1.85	5.68	0.81	2.55	1.39	0.81	2.67	1.39	3.59	1.62	0.23	0.23	0.11	1.16	0.46	15.65
Almondbury	23.33	3.26	1.86	6.25	1.06	3.72	2.13	1.59	2.06	0.80	3.99	1.26	0.20	0.07	0.07	0.80	0.86	16.49
Lockwood (with Workhouse).....	26.84	3.08	2.11	11.35	1.22	5.27	3.73	2.51	2.68	2.03	4.38	1.30	0.97	0.16	0.40	0.97	1.70	23.60
Lockwood (without Workhouse) ..	24.98	2.68	2.03	7.14	0.97	3.16	2.27	1.62	2.27	1.22	3.08	1.13	0.65	0.08	0.24	0.81	1.38	16.63
Lindley	23.26	3.52	2.04	4.08	0.79	1.93	1.02	1.36	2.61	0.57	3.29	0.91	0.11	0.23	0.23	1.02	0.23	13.28
Longwood	21.56	3.51	2.63	6.84	2.63	2.10	1.05	1.23	2.28	0.53	4.91	1.93	0.17	0.17	..	1.05	0.35	17.35
Total for Borough	23.77	3.34	2.01	6.66	1.38	3.27	1.70	1.30	2.23	1.26	3.76	1.20	0.43	0.09	0.37	1.42	0.71	17.43
Do. for 1892	23.00	3.49	2.56	6.89	1.53	3.72	2.11	1.14	2.26	1.44	3.66	1.26	0.50	0.10	0.48	1.24	0.81	18.14

TABLE

JANUARY.				FEBRUARY.				MARCH.					1893.	
1st week ended January 7, 1893.	2nd week ended January 14, 1893.	3rd week ended January 21, 1893.	4th week ended January 28, 1893.	5th week ended February 4, 1893.	6th week ended February 11, 1893.	7th week ended February 18, 1893.	8th week ended February 25, 1893.	9th week ended March 4, 1893.	10th week ended March 11, 1893.	11th week ended March 18, 1893.	12th week ended March 25, 1893.	13th week ended April 1, 1893.		
57	39	46	42	45	51	43	45	41	44	50	42	52	1	 Total
31	39	24	33	24	29	41	28	45	33	41	38	38	2	Deaths at
4	7	3	4	4	3	8	5	5	9	7	8	8	3	
2	2	1	6	5	5	3	4	7	3	5	4	4	4	
4	3	4	6	4	2	5	1	2	1	6	4	9	5	
13	15	8	4	7	9	9	11	15	8	8	9	10	6	
1	1	2	....	1	2	1	2	5	3	2	2	...	7	Deaths from seven principal Zymotic Diseases.
....	....	....	....	....	....	....	....	....	....	..	....	....	8	
1	1	1	....	....	....	1	....	3	3	2	....	....	9	
...	....	....	....	....	....	....	1	1	..	....	2	....	10	
....	....	1	....	....	....	....	....	1	....	....	....	....	11	
....	....	....	....	1	1	....	1	....	....	....	....	....	12	
....	....	....	....	....	....	....	....	....	....	....	....	....	13	
...	....	....	....	....	1	....	....	....	....	....	....	....	14	
....	....	....	....	....	....	....	....	....	....	....	....	....	15	
....	....	....	....	....	....	....	....	....	....	....	....	....	16	
9	11	4	6	5	5	7	9	12	12	14	14	12	17	Deaths from
5	5	2	1	2	2	3	2	9	5	3	3	2	18	
3	2	3	3	3	2	2	2	3	....	2	1	3	19	
....	....	....	....	1	....	1	....	....	....	1	....	3	20	
1	4	2	....	5	2	2	4	2	2	3	4	6	21	Deaths in Public.
29·93	29·82	29·79	29·81	29·71	29·81	29·43	29·04	29·43	30·02	29·59	30·21	29·81	22	Mean Barom.
24·3	34 0	35·8	42·0	42·4	39·5	41·8	36·8	39·2	45·3	42·6	44·0	46·4	23	Mean Therm.
9·0	4·3	7·6	8·1	7·7	7·8	10·8	5·0	11·0	8·4	13·0	24·0	21·0	24	Mean Diurnal
40°	41°	41°	41°	41°	41°	40°	40°	40°	40°	40°	40°	41°	25	Mean height
36°	35°	35°	35°	37°	38°	39°	39°	39°	41°	41°	41°	42°	26	" "
62·0	67·1	74·0	76·0	74·0	70·0	77·0	70·0	70·0	67·0	66·0	47·2	49·0	27	Mean Moisture
0·30	0·17	0·24	0·21	0·85	1·58	0·72	1·12	0·98	0·02	0·57	0·00	0·34	28	Total Rainfall
S E	N E	N W	S W	S W	w s w	S W	N E	W	W	S W	S W	S E	29	Prevailing
16	20	35	29	28	57	36	20	49	40	37	10	20	30	Velocity of Wind,
50°	62°	60°	70°	81°	77°	76°	92°	89°	90°	101°	96°	96°	31	Highest recorded
31°	40°	44°	48°	52°	50°	53°	58°	50°	53°	62°	63°	62°	32	" "
13°	28°	24°	32°	34°	25°	32°	28°	23°	36°	28°	22°	25°	33	Lowest
10°	23°	20°	28°	30°	23°	30°	27°	22°	32°	25°	19°	20°	34	" "
31	27	34	26	24	27	24	12	18	19	18	26	14	35	New Cases of and Home Cases notified as clause 64, Hudd. Hudd. district
10	12	10	9	3	13	11	13	9	8	6	9	14	36	
910	944	953	981	962	962	914	961	1009	959	978	968	1052	37	
30·49	20·86	24·60	22·46	24·07	27·28	23·00	24·07	21·93	23·53	26·74	22·46	27·81	38	Per 1000 of the Population.
16·58	20·86	12·84	17·65	12·84	15·51	21·93	14·98	24·07	17·65	21·93	20·32	20·32	39	
0·53	0·53	1·07	....	0·53	1·07	0·53	1·07	2·67	1·60	1·07	1·07	....	40	Death-rate per 1000 living
4·81	5·88	2·14	3·21	2·67	2·67	3·74	4·81	6·42	6·42	7·49	7·49	6·42	41	
29·19	28·33	24·89	22·20	20·22	19·88	19·20	19·76	20·85	19·59	19·87	20·91	21·26	42	 Death-rate
31·31	33·98	32·91	33·62	33·64	34·47	33·41	32·38	34·29	34·56	32·79	33·36	30·69	43	 Birth-rate

* Signifies Huddersfield had the lowest

52 weeks.		APRIL.				MAY.					JUNE.			
		14th week ended April 8, 1893.	15th week ended April 15, 1893.	16th week ended April 22, 1893.	17th week ended April 29, 1893.	18th week ended May 6, 1893.	19th week ended May 13, 1893.	20th week ended May 20, 1893.	21st week ended May 27, 1893.	22nd week ended June 3, 1893.	23rd week ended June 10, 1893.	24th week ended June 17, 1893.	25th week ended June 24, 1893.	26th week ended July 1, 1893.
Births	1	47	40	34	46	59	39	39	43	45	53	38	46	57
All Ages	2	31	35	32	39	33	36	43	24	32	21	35	27	32
Under 1 year.....	3	6	8	3	7	7	5	3	4	10	4	7	7	6
1 to 5 years	4	2	2	4	8	5	5	5	5	6	4	3	2	2
50 to 60 years	5	4	3	2	6	5	3	7	1	3	4	4	6	5
60 yrs. and upwards	6	12	12	11	5	8	7	16	5	6	3	11	6	11
Seven diseases ..	7	...	....	1	2	1	5	1	2	3	4	3	1	....
Smallpox	8	....	....	....	1	....	1	....	....	....	....	....	....	....
Measles	9	....	....	1	...	1	....	....	....	....	3	1	....	....
Scarlet Fever ...	10	....	....	....	....	....	3	1	1	1	....	....	....	....
Diphtheria.....	11	....	....	....	....	....	....	....	....	..	....	1	....	....
Whooping Cough ..	12	....	....	...	1	....	1	....	....	....	....	....	....	....
Contd. { Typhus ..	13	....	....	....	....	....	....	....	....	....	....	....	....	....
Fever { Typhoid ..	14	....	....	....	....	....	....	....	....	....	....	....	....	....
Other, &c.	15	....	..	....	....	....	....	....	...	....	....	....	....	....
Diarrhœa	16	....	....	....	...	..	....	....	1	2	1	1	1	....
Lung disease, &c...	17	9	11	6	8	10	6	13	6	14	5	8	2	6
Consumption.....	18	2	3	4	5	4	2	6	2	2	3	1	2	1
Heart disease, &c..	19	3	4	2	4	2	3	1	....	1	1	2	3	5
Violence, &c.	20	1	....	1	1	..	....	....	1	....	1	....	....	1
Institutions	21	1	5	3	2	5	4	5	1	2	4	2	4	1
Inches	22	30·18	30·22	30·00	29·95	30·04	30·24	29·64	29·83	29·96	30·24	30·04	29·68	29·71
° F.	23	45·7	44·9	51·5	52·6	51·0	54·4	54·7	54·6	53·6	57·5	61·0	59·8	59·1
Range ° F.....	24	28·0	19·0	20·4	23·0	17·7	24·0	17·0	19·0	16·0	19·0	24·0	16·0	17·0
Earth Ther. 4ft. 6in	25	41°	43°	43°	44°	45°	50°	50°	50°	50°	50°	51°	51°	51°
" " 2ft. 6in.	26	43°	44°	46°	47°	50°	55°	55°	55°	55°	55°	59°	59°	59°
of Air, %	27	52·0	49·0	54·0	49·0	55·0	47·0	63·0	53·0	51·0	63·0	47·0	56·0	58·0
(inches)	28	0·00	0·00	0·50	0·05	0·16	0·00	1·70	0·07	0·19	0·31	....	0·75	0·98
Wind	29	S E	SE NE	S E	S E	W	E	S E	NE	E SE	S E	S E	S E	S W
miles per hour ..	30	14	10	24	14	29	32	20	35	14	12	9	8	28
Temp. in the sun ..	31	99°	99°	105°	112°	109°	109°	110°	112°	114°	114°	113°	125°	117°
" " shade	32	63°	63°	72°	71°	72°	72°	75°	67°	69°	72°	82°	85°	78
" " night	33	31°	28°	37°	38°	35°	34°	42°	40°	38°	44°	45°	48°	44°
" " grass	34	26°	25°	35°	35°	33°	28°	40°	36°	35°	41°	40°	47°	42°
Sickness, Paupers} Patients	35	16	17	33	26	24	20	8	17	27	17	17	16	10
Infectious under} I. Act	36	11	12	15	12	17	25	19	12	18	26	22	11	15
Paupers relieved ..	37	926	961	936	967	940	925	897	898	903	930	892	911	913
Birth-rate	38	25·14	21·39	18·18	24·60	31·56	20·86	20·86	23·00	24·07	28·35	20·32	24·60	30·49
Death-rate	39	16·58	18·72	17·11	20·86	17·65	19·25	23·00	12·84	17·11	11·23	18·72	14·44	17·11
Seven Zymotics ..	40	....	....	0·53	1·07	0·53	2·67	0·53	1·07	1·60	2·14	1·60	0·53	....
Breathing Organs..	41	4·81	5·88	3·21	4·28	5·35	3·21	6·95	3·21	7·49	2·67	4·28	1·07	3·21
33 English Towns..	42	20·88	20·84	21·43	19·68	18·85	18·58	18·96	17·51	17·88	18·18	19·42	22·12	22·73
" "	43	31·50	34·40	32·58	32·87	31·83	31·86	30·60	28·49	34·92	33·13	31·94	31·63	33·02

death-rate of the 33 Large Towns.

TABLE

JULY.				AUGUST.					SEPTEMBER.					1893.
27th week ended July 8, 1893.	28th week ended July 15, 1893.	29th week ended July 22, 1893.	30th week ended July 29, 1893.	31st week ended August 5, 1893.	32nd week ended August 12, 1893.	33rd week ended August 19, 1893.	34th week ended August 26, 1893.	35th week ended September 2, 1893.	36th week ended September 9, 1893.	37th week ended September 16, 1893.	38th week ended September 23, 1893.	39th week ended September 30, 1893.		
55	43	37	40	51	31	36	51	50	44	56	34	33	1	 Total
28	23	35	23	31	28	40	34	33	32	29	39	25	2	Deaths at
7	5	9	6	11	2	8	7	8	11	5	13	4	3	
4	2	1	1	1	1	2	1	7	4	2	6	2	4	
5	3	8	2	4	3	7	3	3	2	2	5	2	5	
5	8	5	5	9	9	9	13	8	7	10	5	8	6	
2	2	4	5	6	2	3	8	10	8	3	8	....	7	Deaths from seven principal Zymotic Diseases.
....	....	....	....	....	....	....	....	....	....	....	....	....	8	
....	....	....	1	....	....	1	....	2	1	....	....	..	9	
....	....	....	....	....	....	....	1	1	....	....	4	....	10	
....	....	....	....	....	....	....	....	....	....	....	....	....	11	
....	....	....	....	1	....	....	....	....	1	....	....	....	12	
....	....	....	....	....	....	....	....	....	....	....	....	....	13	
1	....	1	....	....	....	....	....	....	..	....	2	....	14	
1	..	....	....	....	....	....	....	....	....	....	....	..	15	
....	2	3	4	5	2	2	7	7	6	3	2	..	16	
3	6	5	1	2	7	3	3	1	3	5	4	2	17	Deaths from
3	....	3	5	3	1	7	5	1	5	2	3	4	18	
2	3	3	1	1	4	4	3	1	3	2	1	2	19	
1	1	1	....	....	2	1	2	2	....	2	1	1	20	
2	4	2	3	2	3	3	....	4	3	3	8	2	21	
29.97	29.67	29.75	29.92	29.70	30.01	29.99	29.76	30.04	29.81	29.76	29.35	29.50	22	Mean Barom.
64.8	53.6	58.3	59.7	59.0	61.0	69.2	60.2	59.7	57.8	53.5	50.0	51.9	23	Mean Therm.
25.0	11.0	15.0	11.0	12.8	20.0	26.6	13.7	14.0	16.0	19.0	14.0	13.3	24	Mean Diurnal
54°	54°	55°	55°	54°	57°	57°	57°	56°	56°	56°	55°	55°	25	Mean height
60°	61°	60°	59°	58°	61°	63°	62°	61°	58°	57°	55°	54°	26	" "
53.0	67.0	53.0	56.0	60.0	60.0	54.0	64.0	57.0	63.0	59.0	63.0	65.0	27	Mean Moisture
0.27	1.14	0.29	0.72	0.93	0.31	0.16	0.41	0.45	0.32	0.06	0.72	0.59	28	Total Rainfall
S E	N E	S W	S W	W	S W	S W	S W	w s w	S W	S W	S W	S W	29	Prevailing
14	29	24	28	29	25	14	32	14	25	35	25	29	30	Velocity of Wind,
122°	117°	111°	114°	115°	120°	126°	116°	114°	107°	114	1.4°	102°	31	Highest recorded
85°	72°	70°	70°	69°	80°	87°	71°	70°	71°	69°	62°	61°	32	" "
43°	48°	47°	46°	52°	41°	48°	49°	48°	42°	35°	35°	40°	33	Lowest
42°	45°	42°	42°	46°	37°	44°	45°	43°	37°	30°	32°	35°	34	" "
17	17	14	18	17	13	28	21	16	16	19	16	6	35	New Cases of and Home Cases notified as clause 64, Hudd.
15	13	15	13	16	2	14	12	15	14	15	15	12	36	
905	883	892	887	900	892	900	916	927	900	968	951	966	37	
29.42	23.00	19.79	21.39	27.28	16.58	19.25	27.28	26.74	23.53	29.95	18.18	17.65	38	Per 1000 of the Population.
14.98	12.30	18.72	12.30	16.58	14.98	21.39	18.18	17.65	17.11	15.51	20.86	13.37	39	
1.07	1.07	2.14	2.67	3.21	1.07	1.60	4.28	5.35	4.28	1.60	4.28	....	40	Death-rate per 1000 living
1.60	3.21	2.67	0.53	1.07	3.74	1.60	1.60	0.53	1.60	2.67	2.14	1.07	41	
23.77	24.84	25.10	22.63	21.96	20.91	22.82	21.65	20.60	20.12	19.81	19.70	20.22	42	 Death-rate
29.25	32.15	32.34	31.36	32.29	28.20	32.91	32.31	33.37	31.08	32.52	30.90	31.50	43	 Birth-rate

* Signifies Huddersfield had the lowest

52 week.		OCTOBER.				NOVEMBER.					DECEMBER.				TOTALS & AVERAGES.
		40th week ended October 7, 1893.	41st week ended October 14, 1893.	42nd week ended October 21, 1893.	43rd week ended October 28, 1893.	44th week ended November 4, 1893.	45th week ended November 11, 1893.	46th week ended November 18, 1893.	47th week ended November 25, 1893.	48th week ended December 2, 1893.	49th week ended December 9, 1893.	50th week ended December 16, 1893.	51st week ended December 23, 1893.	52nd week ended December 30, 1893.	
Births	1	51	30	49	41	50	40	38	40	52	58	39	44	35	2311
All Ages	2	35	17	30	33	29	29	33	28	41	27	43	50	36	1695
Under 1 year.	3	9	4	5	7	8	4	5	3	6	6	5	11	4	325
1 to 5 years. . . .	4	4	3	4	4	3	4	3	7	5	4	6	5	5	195
50 to 60 years.....	5	3	3	4	4	3	4	4	2	6	1	3	4	5	199
60 yrs. and upwards	6	7	2	5	10	7	8	8	6	11	6	17	12	10	449
Seven diseases	7	2	....	4	2	2	2	2	2	1	2	3	5	1	134
Small-pox	8	....	....	....	....	....	....	....	....	....	....	....	....	....	2
Measles	9	....	....	....	....	....	1	....	1	....	....	....	....	....	25
Scarlet Fever	10	....	....	....	....	1	....	1	....	....	1	2	3	1	25
Diphtheria	11	....	....	....	....	....	....	....	....	....	....	....	....	....	3
Whooping Cough ..	12	1	....	....	1	....	....	....	1	1	1	....	1	....	13
Contd. { Typhus ..	13	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Fever. { Typhoid..	14	....	....	3	....	1	1	1	....	....	....	1	1	....	13
{ Other, &c.	15	....	....	....	....	....	....	....	....	....	....	....	....	....	1
Diarrhoea	16	1	....	1	1	....	....	....	....	....	....	....	....	....	52
Lung disease, &c...	17	5	5	7	7	6	8	5	6	10	6	13	10	5	362
Consumption	18	5	2	2	2	2	1	5	6	2	3	2	5	5	165
Heart Disease, &c..	19	1	....	1	3	6	....	2	2	3	2	2	2	1	115
Violence, &c.	20	2	1	....	....	....	....	2	....	1	....	3	....	1	36
Institutions.....	21	2	....	6	2	3	3	5	2	4	2	7	4	3	158
Inches	22	29.23	29.69	29.96	29.75	29.66	30.10	29.57	29.90	29.85	29.35	29.52	29.44	30.22	29.72
° F	23	47.9	49.6	54.3	48.2	41.5	39.3	41.5	37.8	39.8	42.6	40.4	41.4	42.2	48.8
Range ° F	24	16.8	13.0	10.0	10.5	14.4	9.8	8.0	8.0	7.0	11.0	11.0	7.4	8.4	14.4
Earth Ther. 4ft. 6in.	25	53°	53°	53°	52°	50°	49°	48°	47°	45°	44°	44°	44°	43°	48°
" " 2ft. 6in.	26	50°	50°	51°	49°	47°	44°	44°	43°	42°	41°	40°	41°	39°	49°
of Air, %	27	59.0	67.0	69.0	67.0	69.0	70.0	80.0	72.0	76.0	77.0	78.0	78.0	76.0	63.8
(inches)	28	0.79	0.84	0.18	0.52	0.76	0.18	0.41	0.63	0.46	1.00	1.16	1.02	0.56	6.67
Wind	29	S	S W	S W	S W	S W	N W E	N E W	N E	N W	W S W	S W	S W	S W	....
miles per hour ..	30	28	32	29	60	50	21	60	34	43	40	38	35	38	28
Temp. in the sun.	31	103°	105°	108°	105°	83°	76°	70°	68°	70°	65°	79°	67°	66°	96°
" " shade	32	60°	63°	66°	58°	55°	48°	55°	48°	54°	50°	53°	50°	48°	62°
" " night	33	37°	34°	40°	38°	27°	27°	33°	28°	22°	26°	28°	33°	32°	35°
" " grass	34	33°	32°	36°	34°	26°	25°	28°	27°	20°	24°	25°	32°	28°	32°
Sickness, Paupers } Patients	35	35	11	24	20	17	19	15	14	25	19	17	20	20	1022
Infectious under } Imp. Act.....	36	9	12	11	16	7	11	19	8	23	18	32	42	15	736
Paupers relieved ..	37	990	974	962	950	946	977	988	990	999	984	953	1050	976	49228
Birth-rate	38	27.28	16.05	26.21	21.93	26.74	21.39	20.32	21.39	27.81	31.02	20.86	23.53	18.72	23.77
Death-rate	39	18.72	9.09	16.05	17.65	15.51	15.51	17.65	14.98	21.93	14.44	23.00	26.74	19.25	17.43
Seven Zymotics....	40	1.07	....	2.14	1.07	1.07	1.07	1.07	1.07	0.53	1.07	1.60	2.67	0.53	1.38
Breathing Organs..	41	2.67	2.67	3.74	3.74	3.21	4.28	2.67	3.21	5.35	3.21	6.95	5.35	2.67	3.72
33 English Towns..	42	18.48	18.19	18.46	18.31	20.24	21.50	24.01	26.21	26.53	28.67	26.66	24.76	22.65	21.60
" " ..	43	31.63	31.46	31.33	32.42	31.11	32.12	30.21	30.79	30.21	30.57	30.44	30.22	26.69	31.92

death-rate of the 33 Large Towns.

TABLE B.—Part I.

New Cases of Sickness occurring during the 52 weeks, ended December 30th, 1893, amongst
Out-door Paupers.

DISTRICTS OF BOROUGH.			1	11	Continu'd Fevers													Smallpox.	Measles and Rötheln.	Scarlatina.	Diphtheria.	Croup.	Whooping Cough.	Typhus.			Typhoid.			Other doubtful (Febricula, &c.)			Diarrhoea and Dysentery.	Cholera.	Rheumatic Fever.	Erysipelas.	Pyæmia.	Puerperal Fever.	Influenza.	Consumption.	a Other diseases of Breathing Organs.	b Diseases of the Heart, Liver, Kidney, Stomach & Bowels.	c Convulsions and diseases of the Nervous System.	Violence, &c.	d Immaturity and Old Age.	e Other diseases.	f Lead Poison.	TOTALS.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
					12	13	14	15	16	17	18	19	20	21	22	23	24							25	26	27	28	a	b	c																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Central		Under 5 .. 5 upwards	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	

TABLE B.—Part 2.

New Cases of Sickness occurring during the 52 weeks ended December 30th, 1893, amongst
Home Patients and In-Patients of the Infirmary.

DISTRICTS OF BOROUGH.			Continued Fevers.												TOTALS.												
			Smallpox.	Measles and Rotheln.	Scarlet Fever.	Diphtheria.	Group.	Whooping Cough.	Typhus.	Typhoid.	Other, doubtful (Febricula, &c.)	Diarrhoea and Dysentery.	Chicken Pox.	Rheumatic Fever.							Erysipelas.	Cancer.	Puerperal Fever.	Influenza.	Consumption.	Other diseases of Breathing Organs.	Diseases of the Heart, Liver, Kidney Stomach & Bowels.	Convulsions and diseases of the Nervous System.	Violence, &c.	Immaturity and Old Age.	Other Disease.	Lead Poisoning.
Home Patients	1	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	a	b	c	31	d	e	f	33
	Central	Under 5.... 5 upwards..	..	3	2	..	..	8	..	..	..	10	..	..	44	5	..	12	2	30	8	2	1	1	36	100	
	Portions of other Districts	Under 5.... 5 upwards..	..	1	..	..	..	4	..	..	..	8	..	..	..	2	..	..	19	104	77	1	..	1	10	..	489
	Central	Under 5.... 5 upwards..	..	2	..	..	..	..	..	..	..	..	..	1	2	..	..	..	6	10	5	2	..	1	10	..	42
In-Patients.	Central	Under 5.... 5 upwards..	..	..	..	..	..	..	..	..	..	..	..	9	2	5	..	..	4	12	36	8	41	7	69	..	193
	Marsh	Under 5.... 5 upwards..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	2	8	1	3	10	..	26	
	Fartown	Under 5.... 5 upwards..	..	..	..	..	..	..	..	..	..	..	..	3	1	..	..	..	..	1	3	..	4	11	1	28	
	Deighton and Bradley	Under 5.... 5 upwards..	..	..	..	..	..	..	..	..	..	..	..	1	..	3	..	..	..	..	4	1	..	9	..	18	
	Dalton	Under 5.... 5 upwards..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	14	4	5	5	1	31	
	Almondbury	Under 5.... 5 upwards..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	5	2	2	12	..	22	
	Lockwood	Under 5.... 5 upwards..	..	..	..	..	..	..	..	..	..	..	..	3	1	3	..	..	2	2	12	7	6	4	12	4	52
	Lindley	Under 5.... 5 upwards..	..	..	1	..	..	..	..	..	..	1	..	..	2	..	2	..	..	..	4	1	1	7	7	1	19
	Longwood	Under 5.... 5 upwards..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	3	2	3	..	2	1	8	..	20
	Whole Borough....	Under 5.... 5 upwards..	..	5	3	1	8	4	..	..	..	11	..	..	65	12	14	..	12	2	30	8	4	2	50	2	940
In-Patients from outside the Borough	Under 5.... 5 upwards..	..	..	..	..	..	..	..	..	..	..	1	..	8	3	22	..	..	6	10	37	29	32	7	3	288	

TABLE B.—Part 3.

New Cases of Sickness reported or heard of as Infectious chiefly under the 64th Clause of the Huddersfield Improvement Act, 1880, during the 52 weeks ended December 30th, 1893.

DISTRICTS OF BOROUGH.		Small-pox	Measles and Rotheln	Scarlet Fever	Diphtheria	Membranous Group	Enteric Fever	Erysipelas	Chicken-pox	Puerperal Fever	Pneumonia	Tuberculosis	Other Diseases and Trifling Ailments	TOTALS
1	11	12	13	14	15	16	19	24	25	26	28	a	e	32
Central Wards..	Under 5 ..	..	..	43	1	..	1	..	..	..	..	..	2	47
	5 upwards.	28	..	142	3	..	13	..	1	..	..	..	5	192
Marsh	Under 5 ..	..	..	14	..	..	..	..	..	..	..	..	..	14
	5 upwards.	2	..	27	2	..	9	..	..	..	..	..	1	41
Fartown	Under 5 ..	..	..	10	..	..	..	1	..	..	..	..	..	11
	5 upwards.	4	..	40	1	..	2	3	..	..	..	..	3	53
Deighton and Bradley	Under 5 ..	..	..	5	..	..	..	..	..	..	..	..	..	5
	5 upwards.	..	..	13	..	..	1	2	..	..	..	..	2	18
Dalton	Under 5 ..	..	..	2	..	..	..	..	..	..	..	..	1	3
	5 upwards.	2	..	31	1	1	6	..	..	..	..	..	..	41
Almondbury ..	Under 5 ..	..	..	27	..	..	..	..	..	..	..	..	..	27
	5 upwards.	3	..	75	3	..	11	1	..	2	..	..	6	101
Lockwood	Under 5 ..	..	1	21	1	1	..	..	..	..	..	..	..	24
	5 upwards.	1	..	103	1	..	3	..	..	..	..	..	..	108
Lindley	Under 5 ..	..	..	3	..	..	..	..	..	..	..	..	..	3
	5 upwards.	3	..	8	..	..	4	..	..	..	..	..	1	16
Longwood	Under 5 ..	..	..	4	..	..	..	..	..	..	..	..	..	4
	5 upwards.	..	1	7	..	..	7	..	..	..	..	..	4	19
Infirmary	Under 5 ..	..	..	..	..	..	..	..	..	..	..	..	..	..
	5 upwards.	..	..	4	..	..	..	..	..	..	..	..	..	4
Crosland Moor Workhouse ..	Under 5 ..	..	..	..	..	..	..	..	..	..	..	..	..	..
	5 upwards.	5	..	..	..	..	..	..	..	..	..	..	..	5
Whole Borough	Under 5 ..	..	1	129	2	1	1	1	..	..	..	..	3	138
	5 upwards.	48	1	450	11	1	56	6	1	2	..	..	22	598

TABLE IX.

Cases of infectious diseases certified under the 64th clause of the Huddersfield Improvement Act, 1880, or heard of through others so certified and by private enquiries, during the four quarters of the 52 weeks of the year 1893.

A Cases of Small-pox, Scarlet Fever, Typhoid, and Typhus Fever.

	13 weeks ended April 1st, 1893.				13 weeks ended September 30th, 1893.				13 weeks ended December 30th, 1893.				52 weeks ended December 30th, 1893.			
	Cases heard of.	Admitted to Hospital.	Total deaths in Borough.	Deaths in Hospital.	Cases heard of.	Admitted to Hospital.	Total deaths in Borough.	Deaths in Hospital.	Cases heard of.	Admitted to Hospital.	Total deaths in Borough.	Deaths in Hospital.	Total cases reported or heard of.	Admitted to Hospital.	Total deaths in Borough.	Deaths in Hospital.
Small pox	22	22	..	2	16	9	2	2	1	9	1	..	48	48	2	2
Scarlet fever	81	66	4	4	188	116	6	5	180	150	9	5	579	511	25	17
Typhoid fever	10	1	1	..	3	21	4	1	23	6	8	2	57	10	13	3
Typhus fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
The above 4 diseases..	113	89	5	3	207	195	8	6	204	157	17	7	684	569	40	22

B Other Diseases.

	1st Quarter.		2nd Quarter.		3rd Quarter.		4th Quarter.		TOTAL.	
	Heard of.	Hospital.	Heard of.	Hospital.	Heard of.	Hospital.	Heard of.	Hospital.	Heard of.	Hospital.
Continued fever	..	..	..	..	..	..	..	..	..	..
Measles and Rötheln..	..	..	2	..	..	..	..	..	2	..
Chicken-pox	1	..	..	..	..	..	..	..	1	..
Diphtheria	7	..	..	..	4	..	2	..	13	..
Puerperal Fever	..	..	2	..	..	..	..	..	2	..
Erysipelas	2	..	2	..	2	..	1	..	7	..
Other and doubtful..	4	6	2	..	5	1	16	1	27	8

STREET LIST.

Arranged under the heading of each Infectious Disease.
Deaths which occurred at Birkby Hospital are allocated to
the District from which the cases were notified.

PLACE OF DEATH.	DISTRICT.	Smallpox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Simple Fever.	Enteric Fever.	Diarrhoea.
The Shore	Central .. .		1			1			1
Seed Hill	" .. .					1			
Spivey's Yard, Denton Lane	" .. .					1			
Northumberland Street ..	" .. .					1			1
Shore Head	" .. .			1					
Birkby Fever Hospital ..	" .. .			6					
Rosemary Lane	" .. .					1			2
Graham's Blds., Fitzwm. St.	" .. .								1
Bradford Road	" .. .		1						
King Street	" .. .							1	
Thomas Street	" .. .								1
Northgate	" .. .								2
Milford Street	" .. .								1
Chapel Hill	" .. .								1
St. Andrew's Road	" .. .		1						
Byram Street.. .. .	" .. .								1
Union Street	" .. .								1
Cross Church Street	" .. .								
Great Northern Street ..	" .. .		1						
Beast Market.. .. .	" .. .								1
Kirkgate	" .. .								1
Brook Street	" .. .								1
Castlegate	" .. .								1
Calton Street.. .. .	" .. .			1					
Newtown	" .. .		1						
Water Street	" .. .			1					
Ramsden Row, Paddock ..	Marsh .. .		2						
Church Street, ...	" .. .		1						
Market	" .. .		1						
Birky Fever Hospital ..	" .. .			3				1	
Cross Lane, Marsh	" .. .								1
Field Street, ...	" .. .						1		
High Street, Paddock ..	" .. .								1
Cross Church St., Paddock ..	" .. .								1
Wren Street, Paddock ..	" .. .								1
The Crescent, Paddock ..	" .. .								1

STREET LIST—CONTINUED.

PLACE OF DEATH.	DISTRICT.	Smallpox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Simple Fever.	Enteric Fever.	Diarrhoea.
Bryan Road, Edgerton ..	Marsh ..	..						1	
Shires Hill, Paddock ..	" ..	..		1					
Willow Lane	Fartown ..	..			1				
Bradford Road	" ..	..	1						
Filbert Street, Birkby ..	" ..	..							1
Bradford Road North ..	" ..	..				2		1	
Fartown Green Road ..	" ..	..							1
Sheepridge Road	" ..	..							1
Birkby Fever Hospital ..	Marsden ..	..	1						
" " ..	Manchester ..	..	1						
" " ..	Gainesboro ..	..						1	
" " ..	London ..	..						1	
Kirklees Lock	Deighton & Bradley			1					
Leeds Road, Deighton ..	" "		1						
Birkby Fever Hospital ..	" "			2					
The Post Office	Dalton ..	..						1	
Eastwood Street, Moldgreen	" ..	..							1
Storthes	" ..	..							1
Almondbury Bank	" ..	..							1
Silver Street, Storths ..	" ..	..		1					
Robinson's Fold, Moldgreen	" ..	..							1
Dalton Green	" ..	..						1	
Birkby Fever Hospital ..	Almondbury	.		1					
New Laithe Hill	" ..	..							1
St. Helen's Gate	" ..	..	1						
Northgate	" ..	..	1						
Chapel Street, Berry Brow..	" ..	..	1						
Birks, Salford	" ..	..						1	
Nook, Newsome	" ..	..							1
Waterside, Salford	" ..	..							2
Mulberry Street, Moldgreen	" ..	..							1
Stile Common	" ..	..							2
Heppenstall St., Primrose Hill	" ..	..							1
Parkgate, Berry Brow ..	" ..	..							1
Orchard Terrace, Primrose Hill	" ..	..						1	
Thorpe House	" ..	..						1	
Town End	" ..	..				1			

STREET LIST—CONTINUED.

PLACE OF DEATH.	DISTRICT.	Smallpox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Simple Fever.	Enteric Fever.	Diarrhoea.
Mount Street	Lockwood ..				1				
Victoria Road	„ ..		2						
Victoria Hotel, Lockwood Rd.	„ ..		1						
St. Stephen's Place	„ ..		1						
Moor End	„ ..		1						
Albert Street	„ ..		1						
Nabcroft	„ ..					1			1
Chapel Terrace, C. M. ..	„ ..								1
Woodfield Road	„ ..								1
Birkby Fever Hospital ..	„ ..			2					
Thornton Lodge Road ..	„ ..			1					
Union Workhouse	Meltham ..				1				
„ „ ..	Huddersfield ..	1							1
Stanley Street	Lindley ..			1					
Lidget „ ..	„ ..								1
George „ ..	„ ..								1
Acre „ ..	„ ..								1
Wellington Street	„ ..					1			
Cliff End	„ ..		1						
West Street	„ ..					1			
Birkby Fever Hospital ..	„ ..			1					
Cliff End	Longwood ..		1						
Lower Gate	„ ..		2						
Birkby Fever Hospital ..	„ ..			2					
Dusty Miller	„ ..								1
Armitage Road	„ ..								1
Outlane	„ ..					1			
Spark Hall	„ ..								2
Cliff End	„ ..								1
George Street	„ ..								1
Laches	„ ..								1
Mount	„ ..								1
Nettleton Hill	„ ..					1		2	

REMOVAL OF NUISANCES.

Yearly Report 1893, January 1st to December 30th.

	1st quarter.	2nd quarter.	3rd quarter.	4th quarter.	Totals.
Drains requiring Re-construction (stone drains) ..	45	51	45	25	166
Do. do. (pipe drains) ..	17	5	5	17	44
Do. Connecting with Main Sewer ..	16	25	17	9	67
Drains not efficiently trapped ..	75	94	103	32	304
Do. requiring Ventilation Shafts ..	38	33	41	15	127
Defective Sink Drains ..	60	45	96	48	249
Do. Yard Drains ..	25	27	46	17	115
Do. Cellar Drains ..	10	16	44	20	90
Do. Eave and Fall Pipes ..	23	16	20	11	70
Do. Street Gullies ..	2	9	..	12	23
Do. Roofing ..	6	3	2	..	11
Do. Urinals ..	3	3	1	2	9
Do. Baths ..	2	6	..	2	10
Do. Water Closets ..	37	18	6	4	65
Sink Pipes, &c., requiring Disconnecting ..	129	121	130	74	454
To provide Sinkstones to Houses ..	1	16	1	..	18
Fall Pipes requiring Disconnecting ..	58	83	56	31	228
To provide Eave and Fall Pipes ..	20	21	5	7	53
Nuisances from want of Drains ..	6	..	3	3	12
Do. Water in Cellar ..	8	7	11	17	43
Do. Cellar Wells ..	..	..	..	..	..
Do. Cess Pools ..	2	5	1	2	10
Do. Stagnant Water ..	2	..	2	..	4
Do. Defective Paving of Yard ..	5	2	4	2	13
Do. Smoke ..	4	3	1	..	8
Do. Poultry and Pigeons ..	2	3	9	5	19
Do. Animals ..	..	2	..	..	2
Offensive Accumulations ..	26	8	10	1	45
Do. Ashpits and Privies ..	30	6	9	3	48
Do. Swill Tubs ..	10	12	4	3	29
Do. Urine Receptacles ..	3	2	1	1	7
Urine Guards required ..	7	4	..	4	15
Closets requiring Lime-washing ..	12	9	3	1	25
Ashpits and Closets requiring Re-construction ..	11	7	8	1	27
Ashpits and Closets requiring proper doors and covering ..	30	26	21	5	82
Old Privies altered to tub or water closet system ..	31	65	12	12	120
Insufficient Closet Accommodation ..	19	12	9	2	42
Houses Overcrowded ..	..	1	2	3	6
Do. Unfit for Habitation ..	..	1	..	1	2
Do. Requiring Cleansing ..	2	1	..	3	6
Do. Requiring Ventilation ..	2	..	5	3	10
Do. Damp ..	4	5	4	2	15
Do. Requiring Water Supply ..	1	9	..	..	10
Cowsheds requiring Lime-washing ..	..	13	2	5	20
Do. do. Draining ..	..	1	..	..	1
Do. do. Paving ..	..	..	..	..	..
Bakehouses requiring Lime-washing or Cleansing ..	..	..	..	..	..
Totals ..	784	796	739	405	2724

LOADS COLLECTED DURING THE YEAR 1893.

1893.	Ashes.	Street Sweepings.	Market Refuse.	Slaughter House Refuse.	Trade Refuse.	Snow.	Water from Mains.
January.....	3387	374	65	27	55	305	...
February	3119	323	56	18	68	...	...
March	3214	276	56	25	72	...	...
April	2861	280	63	34	48	...	1443
May	3518	311	64	18	79	...	1416
June	3302	280	75	27	43	...	270
July	2583	252	73	25	41	...	125
August	2523	304	78	26	37	...	251
September.....	2220	293	86	27	35	...	68
October	5528	683	131	78	104	...	...
November	2633	357	57	22	44	...	...
December							
Total.....	34888	3733	804	327	626	305	3573

Particulars of Work Performed by Scavenging Staff at Hillhouse Depot, Streets, &c.

1893.	Loads of Receptacles brought in to the Depot.	Number of hours worked by Sweeping Machine.	Refuse burnt in Hillhouse Destructor.		Tons of Clinkers removed from Hillhouse Destructor to tips.	Tons of fine ashes from Hillhouse Destructor made into manure.
			Loads.	Tons.		
January ...	1931	117	1397	1182	626	64
February ...	1768	120	1189	1000	366	.....
March ...	1920	187	1371	1160	499	.....
April ...	1822	154	1009	858	275	152
May ...	2039	175	1336	1135	697	300
June ...	1835	179	1168	1000	437	.....
July ...	1954	179	1177	1000	311	65
August ...	2042	143	1248	1060	202	143
September	1879	137	1111	944	238	312
October }	3843	278	2722	2313	540	.....
November }	1855	157	1251	1013	410	58
December...						
Year ...	22888	1826	14979	12665	4601	1094

HILLHOUSE DEPOT, MANURE SALES 1893.

MONTHS.	Stable Manure	Shoddy Manure	Grass Manure	Market Refuse.	Night- soil.	Slaugh- ter house Refuse.	TOTALS.
1893.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
January	107	16	64	64	64½	32¼	347¾
February	73½	24	180½	24	156¼	40	498¼
March	89	39	194	48	130	46	546
April	96½	16	87	40	152	37	428½
May	74½	32	57¼	16	284	17	480¾
June	28¾	47	¾	18½	201	38	334
July	93¾	32	26	42¾	65	24	283½
August	40	16	25	32	123	41	277
September ...	138	...	40½	4¾	312	33	529¼
October	93½	32	41¾	72	404	69	712¼
November ...							
December.....	16¾	16	42½	46	58	40	219¼
Approximate Total	851¼	270	759¼	408	1949¾	417¼	4655½

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